

ITEMS OF INTEREST.

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Shots from the Profession.

PERRY'S REMARKS IN CONJUNCTION WITH BONWILL ON AMALGAMS AND ANTICIPATION, ETC.

DR. W. G. A. BONWILL, PHILADELPHIA, PA.

Editor ITEMS OF INTEREST:

I must call your attention to May number of ITEMS OF INTEREST, where you have made extracts from the *Cosmos* of my article on "Amalgams," and attached the remarks of Dr. I. G. Perry, from a subsequent number of *Cosmos*, where I am made to say that I had abandoned *self-cleansing surfaces* or separations to preserve teeth from further decay without filling, regretting that I had ever done it. You are so very careful and correct in your selections I cannot blame you very much for this serious mistake.

Now I should not be Bonwill, unless I had the liberty of changing my views, my practice, or my instruments whenever I please. Circumstances meet me every day where I am compelled to vary from the beaten course or fail. No one can in the practice of dentistry chain himself to an absolute system in each and every case. No better field for ingenuity looms up before the wide-awake operator. Any one who will follow my past history must admit that I have been constantly on the change, cutting off here and adding there, etc. I am able to do it and proud that I have the independence to do so!

Have I changed at all in my views of the practice of anticipating decay in human teeth? So far as the theory is concerned, I say no! Have I changed in its application to the age of patient and the character of the teeth, and the caries met with? Yes! Thirty years ago, teeth were very different in constitution than now. Then, a separation after decay had commenced could be checked. Fifteen years ago, I could anticipate decay by the use of special instruments in my dental engine, and in two-thirds of the bicuspid and molars I could save from further caries. The superior or inferior incisors I could save seven-eighths at least. To-day, or during the past five years, I am not able even to preserve a tooth from further ravages of caries by Arthur's or any other plan where decay has once commenced, without filling with some material.

In many cases, when I have attempted to *anticipate*, believing there was but a trifle of caries, I have been baffled ; for as soon as the separation has been made, I detect a change of color, but the surface has not yet given way sufficiently to allow me to get into the substance changed, such fine exploring needles as I use. A small bur in the engine very soon tells the tale that a hole of slight diameter, but deep in proportion, is actually there. The exploring needle will not pass into the changed tissue. It can be detected only by the educated eye, and touch, and by the aid of a dried surface, with a strong light.

So soon do teeth commence to decay after contact, that with young patients, when they are not careful in cleansing, and the temporary teeth still in position with their broad flat surfaces in contact with the coming permanent tooth, that it is almost impossible to anticipate decay except in the temporary set, when you can commence as early as the third year, and in the cases of the present generation in the past eight years. Separation of any kind cannot insure success, for decay has gone beyond the boundary and filling must be done. The poor constitution of teeth generally found in large cities offer no hope for anticipation or separation when decay has shown itself.

To commence so early as the third year for the temporary and the twelfth year for the permanent set, except in the incisors, will not do unless you can have the perfect consent of patient and their complete obedience in submitting to the unpleasantness of the engine. The present average child is so nervous over the treatment of the teeth that they are very difficult to manage, and parents no longer have their progeny under control, nor have they the powers of endurance requisite for a healthy life.

What are we to expect in the future from any treatment looking to the anticipation of decay, by cutting or by filling when we find the second temporary molar on its distal surface, where nothing but the gum is in contact, running to decay, shortly after it is in position ? Also the first permanent molar on its distal surface, when the second molar is nowhere near ? The imperfect calcification of the tooth with the class of soft food now used and the imperfect cleansing, and the immense amount of saccharin that daily and hourly enter the mouth and clog on the surfaces of the teeth, make the problem harder to solve each coming year. This, to say nothing of the class of operations performed by most dentists ; the want of method in laying out their work and systematically taking the teeth to be treated that most need it ; the want of foresight in commencing where they should have completed the operations ; the general lack of engineering skill in mapping out the whole thing in advance, etc., all warn us that we lack that peculiar training given to the mechanical and civil

engineer of prospecting the work and taking in the whole thing before we commence an individual act.

Then, sir, I still hold to the principle of cutting for anticipation in both the temporary and permanent sets. Indiscriminately, however, it cannot be done. We must have surroundings or we cannot carry out any principle. The lack of constitution then, in the present tooth, forbids the general practice of anticipation or separation. That done by me years ago when substance was better, I know did its work, when I am confident decay would have occurred inevitably. This I have proven so often by anticipation on the most unfavorable side of the mouth and allowing the opposite side to remain in normal contact.

The judicious extraction of the first permanent molars in but few cases saves the remaining teeth from caries. Even where the bicuspid have separated from each other, I have found them decaying where no cause of contact before had predisposed. I have occasion to see every year, a tooth—first inferior bicuspid left—that thirty-four years ago I removed the entire enamel and left it a perfect pyramidal cone which could not allow a particle of food at any point to accumulate thereon. It remained perfect till two years ago, when I found on its polished surface, where most exposed to food and the brush, decay treacherously coming. I filled it with amalgam, and in another year, at a point near the apex of the cone, I found another carious spot. What but the constitution of the tooth undergoing a change in its very substance at the age of fifty-two could have produced it? All the upper teeth were lost at twenty-two. All the lower I have preserved for thirty-four years, when, at the time I first commenced their treatment in 1854, scarcely an inferior incisor but had caries deep enough to demand a filling. But notwithstanding their poor structure, only two pulps have been treated and not a tooth lost in the inferior jaw, and yet this one inferior bicuspid that resisted over thirty years at last decayed. There were several others I cut at the same time that did not afterward decay.

Here is a case that had poor teeth at that early age, that, from cutting with a chisel and smoothing with a file and stone—no engine—resisted decay and gave way only on one cut surface. He kept his teeth scrupulously clean and came once a year for treatment. Where I did not cut, not an proximal surface but had to be filled.

A word as to self-cleansing surfaces after filling. For ten or twelve years, I have seldom made them of the boldest character and wide at the cervix; but contoured by cutting, and, by the use of gutta-percha, widening or pressing the teeth apart from mastication on it.

To sum up.—Cutting the surface of any tooth is legitimate and correct practice. It can and should be done in many cases. It cannot be done as a broad gage rule where the average dentist has to do it.

That hundreds of teeth can be saved ; and, if decay in the future takes place, there is not so much tooth substance gone. In the incisors, even if poor, I fail not to do it. I expect to do it whenever I believe it prudent. For the ultimate safety of the human teeth, nothing save a change to a more primitive diet, and the proper use of our teeth and observance of hygienic laws will ever give us immunity from caries.

ALVEOLA ABSCESS, WITH FISTULA OPENING ON THE NECK.

W. D. M. MASON, D. D. S., FORT WORTH, TEXAS.

Miss H., of Wichita Falls, Texas, accompanied by her father, came to Fort Worth, the 15th of May, to have an operation performed for necrosis of the inferior maxillary ; but before operating her physicians, Drs. J. M. & F. M. Mullins, were generous enough to bring her into my office to see if her teeth caused the trouble. Examination showed the first and second inferior molars on the right side filled with amalgam ; work done two years ago. The first died and abscessed in a few months, and was then extracted. Soon afterward a running sore made its appearance on the neck, near the origin of the platysma myoides muscle, under the second molar. She again called in the services of the dentist, who said : " Let it alone ; it will get all right after awhile." My advice was not to cut down through the muscles from the outside to the bone and have a piece of it chiseled off, but to have the tooth opened up and treated through the root canals, as well as through the sinus on the neck. This I did, forcing as much medicine through the apex, out into the sinus, as possible ; then through the sinus, connecting the treatment. I kept this up for four weeks, the sinus showing evidences, from day to day, of granulations, filling in from in to outward. Three days after filling the tooth the sinus closed. Next day Miss H. came in for me to examine it, when the sinus presented an angry, bulging appearance. Puncturing it with a probe, I discovered the sinus filled with pus, and, like Dr. G. V. Black, Professor of Pathology in the Chicago College of Dental Surgery, I saw that my treatment had not cured. My next step was to have Drs. Mullins examine it, which they did. (I did this through courtesy, as they gave me the case.) Dismissing the patient for the day, we talked over the case. They said I had a capital operation to perform, and wanted to see me operate. Explaining how I expected to do it, I went back into my office. Instead of coming into my office next morning, Miss H. went into Drs. Mullins' office, and, after consulting them, came into my office, accompanied by Dr. Jim Mullins, who wished the tooth extracted, which I did. Of course, after removing the tooth, nature will restore all the parts without any assistance ; yet Dr. Mullins probed and washed out the cavity for at least half

an hour, keeping it up for a week or more. This is the first time any member of the medical profession ever treated me unprofessionally.

If I had had my own way, my operation would have been to cut down through the labial wall of the alveolar ridge, connecting it with the fistula; then to syringe it out with a solution of bichloride of mercury, followed by pumping aromatic sulphuric acid, carbolic acid, iodoform, peroxid of hydrogen, tannin and glycerin, which would have certainly dissolved out any necrosed bone, and destroyed all diseased tissues, micrococci, etc., leaving the tooth a monument to dental surgery. On account of the roots being exceedingly flat, I failed to get a sufficient quantity of medicine through to destroy the pus, hence failure in permanently arresting the disease. This is the first case I ever failed in curing. The failure was caused by my not being able to pump the medicine out through the fistula. After the fourth treatment, however, the pus was perfectly odorless and less in quantity, continuing so up to the time named above—four weeks.

This young lady had been treated off and on for over a year by a physician, who claimed that a piece of the inferior maxillary was dead and would have to be cut off. She said he burned it several times with nitrate of silver. No doubt Dr. Mullins gets the credit for curing this case, though I removed the cause; and had I operated as I have described, the young lady would have had years of service from the old diseased tooth. Had this operation failed, then I could have resorted to the forceps; yet this should be the last resort.

AN OBJECT LESSON—HEAVY UNDERPARTIAL SETS.

BY DR. L. P. HASKELL, CHICAGO.

Recently a dentist for whom I had made several continuous gum sets, sent me a cast of the lower jaw, for a partial set (bicusps and molars) of continuous gum. Having made many of these cases and devoted much thought to the subject of partial lower sets (the most troublesome class of cases to make, and to induce patients to wear), I at once wrote to the dentist advising him to make the case of gold with rubber attachments, because these partial lower sets were constantly settling from the giving way of the alveolar process to a much greater extent than any other class of cases. This is caused, I judge, to a considerable extent to the great pressure in masticating, that is brought to bear on the jaw so far back. But this can not altogether account for it, for we often find instances where the posterior teeth have been extracted for many years, no plate worn, and yet but little process left.

The fact of the teeth thus shortening, and the necessity, from time to time of raising them, especially where a full upper set is worn, and

it becomes necessary to relieve the pressure on the front teeth, it is advisable to insert them on gold with rubber attachments, or else a rubber plate, that these changes can be made at small expense to the patient.

The dentist replied that my idea was a good one, but that his patient had seen an upper continuous gum set and wanted to have a partial lower made like it, though he was wearing a gold plate satisfactorily in all respects.

I at once completed the job and sent it to him, but to my surprise, it was returned in a few days with the request that I would cover the entire lingual surface with porcelain, including the strip back of the anterior teeth.

This request seemed so ridiculous, and supposing he did not fully realize the consequences, I returned it to him, saying there were very serious objections to doing it, that it was entirely unnecessary, as the metal was not seen in the mouth, and that it would more than double the thickness of the plate back of the teeth, where the tongue realizes *bulk* more than anywhere else, and where the advantage of metal over rubber was found in the fact that it could be made so much thinner and yet be much stronger. Then the slightest springing of the plate, and these cases were constantly liable to this, would result in fracture and scaling off. And finally, the great weight in addition to mastication would rapidly accelerate the absorptions of the process and necessitate the lengthening of the teeth to accomplish which it would be necessary to remove the teeth and porcelain and replace, making it an expensive job.

The plate was again returned to me, expressing surprise that I had not done as requested. I complied and returned it, stating that in all my experience with continuous gum work, I had never seen that folly perpetrated before by any dentist.

Obtundents.—The ideal obtundent has not been discovered. Herbst's is often good. This is made by saturating cocaine with sulphuric acid, then adding ether and pouring off the superfluous liquid; the residuum is used. Robinson's Remedy is good; this is found in our dental depots. It is difficult for most of our dentists to make it satisfactorily. We have found serviceable equal parts by weight of bicarbonate of soda and tannin, saturated with equal parts oil of cloves and creasote. A single application is not generally sufficient; but if a little on cotton is kept in the tooth-cavity sealed with sandarach varnish for a day or two, and then repeated after some of the decayed dentine is removed, it will be found of decided benefit. Sometimes a third application is desirable.

FORCES ENGAGED IN THE CIRCULATION OF THE BLOOD.

PROF. C. W. SPALDING, ST. LOUIS.

Your August number contains a selection from the *Am. Homeopathist*, by Dr. A. M. Cushing, under the heading, "How does the Blood Circulate." Dr. Cushing, after having seen the blood circulate in the arteries of a fly's wing after it was just torn from the body, concludes that the muscles of arteries "can continue the circulation without the assistance of the heart. That the muscles of all arteries *aid* in the circulation is a well-established fact in physiology, but there are other forces that also contribute to the same phenomenon. Besides the rythmical contractions of the heart, which may be regarded as the central circulatory force, the voluntary and involuntary respiratory movements of the lungs, the contraction of muscles, and the reflex force of the capillaries may be mentioned. "An attraction exists between all the fluids of the body and their respective destination and uses, and in the blood, a manifest attraction inviting that fluid away from the parts that do not require it, toward those that do." That there is a living power in the tissues which invites and attracts the arterial blood, and at the same time repels the exhausted venous blood, can scarcely be doubted.

In speaking of the circulation of the blood, Michael Foster, than whom we have no higher *acknowledged* authority, says: "The heart is a pump, the motive power of which is supplied by the contraction of its fibers. Regarded as a pump, the effects are determined by the frequency of its beats, by the force of each beat, and by the quantity of fluid each time ejected. The quantity ejected at each beat is governed more by the state of the rest of the body than by the state of the heart itself." Excepting the latter clause, I think this view must be regarded as fallacious. The muscular force of the heart is, of itself, insufficient to maintain the circulation of the blood.

In addition to the forces already mentioned, there is another more important in its action than the combined action of all the auxilliary forces named. I allude to the life force resident in the blood. That the life of the body is in the blood is evident from the fact that any function of the body other than the circulation of the blood may be suspended for a considerable time and resuscitation is still possible. Respiration may cease and all our conscious life be suspended, but so long as the blood moves life remains.

In the ordinary process of dying the motions of the heart, especially the systolic sometimes continue after respiration ceases, and all other outward signs of life disappear. The diastole of the heart is first enfeebled, and then grows weaker and weaker till the blood flows through the auricles, almost without perceptible contraction of these

chambers. The systolic motion is the last to expire, and so long as this continues, even at long intervals, resuscitation is possible, unless prevented by other unfavorable conditions.

In vegetables, sap circulates in the absence of special organs; in the lower animals the blood circulates without the *existence* of a heart; and in cold-blooded animals possessed of a heart, the movement of the blood continues, after its excision and removal, as it did in the fly's wing. The onflow of the blood in the *vene cave* causes an expansion of the auricles in the heart's diastole, and the pressure of the blood coming from the auricles partly fills the ventricles before contraction seizes the base of the heart. This movement of the blood which is strong enough to open and command the heart valves, should not be attributed to the contractile force of the heart. The source of power in such case would, by its remoteness, be too uncertain for so vital an organ. Is it then too much to assume that a vital circulatory force dwells in the blood itself? Harvey, in speaking of the egg, says: "First of all, there is in it a drop of blood which palpitates, and from which are formed the auricles of the heart." As to the auxilliary forces, there is not a point or function in the circulatory system but contributes to the movement of the blood.

PROMINENT CUSPIDS.

DR. GARRETT NEWKIRK, CHICAGO.

(Answer to R. P. Smith, Sturgis, Dakota.)

The case of the prominent cuspids instanced by Dr. Smith is one not unusual. It must have been caused by the premature and unwise extraction of the deciduous cuspids, otherwise the first bicuspid would not be "against the lateral incisors," as he states. He should not think of extracting these cuspids. That would be the worst thing he could do—even worse than to sacrifice the lateral incisors. If there is a demand for a general widening of the arch possibly room might be obtained for the cuspids without extraction, otherwise the teeth to remove would be the first bicuspid.

Usually the cuspids will move inward and backward into the spaces so made with little or no assistance. The patient may be instructed to exert frequent pressure with the fingers, and this will probably be sufficient. If, however, this simple means should fail, the necessary aid may be given by any one of several appliances. For example, one end of a stiff gold clasp may be vulcanized into a close fitting rubber plate, and bent to pass around, so that the free end shall bear on the outer anterior face of the tooth, bending the clasp backward once or twice a week. It will soon draw the cuspid to its place. There is no tendency in such cases to a reproduction of the irregularity.

WHAT IS SCIENCE.

DR. J. SMITH DODGE, NEW YORK.

Many persons, who ought to know better, imagine that a man of science is one who knows facts generally unknown, and can state strange theories about them; so that remoteness from the observations and conclusions of average life becomes the central idea of science. How absurd this idea is need not to be argued; and yet even those who are doing honest scientific work do not always know what constitutes a valid claim to the honor of that name. Etymologically, science means, and has meant, these five and twenty centuries, *knowledge*. But, in the language of the nineteenth century, *science is the knowledge of things in their relation to each other*. And this recognition of the supreme importance of *relation* in the knowledge of facts is the distinctive mark of all science. The mechanic, the miner, the savage hunter, can teach the physicist, the geologist, and the naturalist separate facts which the learned never knew. But to the empirical minds of the uncultured each fact stands by itself—curious or useful, but alone; while the man of science immediately fits, or strives to fit, each separate fact into some gap where other facts had not seemed completely adjusted to each other; and the result is often like adding the keystone to the arch—it is only one stone more, but it makes efficient all the rest. Precisely the same consideration, turned the other way, corrects the pernicious fancy that the chief business of science is to spin theories, and mostly from a very slender staple. So untrue is this that the moment any man's theory goes a hair's breadth beyond known facts, science refuses to be responsible for the conception, and it becomes the individual hypothesis of the inventor to stand or fall on his responsibility alone. What is actually done, when the wonder-working hand of science ennobles the meanest thing, and brings cosmos out of chaos, is to demonstrate the ascertained relations of ascertained facts, constituting an order which existed equally before it was suspected, and is wholly independent of invention. There is no more perfect statement of the true meaning of scientific discovery than Kepler's, who having at last verified the three laws of planetary motion, exclaimed, "O God, I think my thoughts after Thee!" And this idea, which is so sublime in its larger applications, abates nothing of its severity when it is applied to the smallest and most familiar things. In the contour of a bicuspid, as in the movements of the heavens, that, and that alone, is scientific which expresses the actual relation of actual facts.

It is by thus *sorting* our facts that science removes the vast difficulty of remembering or recalling the numberless integers of human knowledge. The fundamental law of memory, association of ideas, enables

the mind to pass from point to point along and across the endless web, and, having what is before the eyes, to recall whatever of the kind has been previously seen. By this means alone, the human mind is capable of the knowledge it already possesses, and looks forward, without dismay, to the sure increase of the future. And it must be by this means alone that dentistry will keep at its free disposal all the past has yielded, and be glad to give hospitable welcome to all that is yet to come.—*N. Y. Transactions.*

Editor ITEMS OF INTEREST:—In the last number of "ITEMS" there is a small paragraph on "Cocaine at Illinois Dental Society."

I have been using a preparation of cocaine and carbolic acid and sometimes with a little chloral hydrate added, and, I must say, with great success, having as yet to receive a complaint from the patient.

I have been searching medical and dental journals for knowledge on cocaine poisoning. Can you or any of the readers of the ITEMS tell what the best treatment would be should bad results occur in injecting for extraction?

Norfolk, Va.

W. PAUL MOORE.

The Physiology of Pleasure.—The following is from the *Medical Press*: The question has often been asked as to what constitutes the greatest pleasure and who is the happiest man, but it is obviously one that does not admit of solution. The intensity of the pleasurable sensation is a matter of temperament and surroundings, but, other things equal, the happiest man is he who possesses the greatest sensibility, the most powerful imagination, the strongest will and the least number of prejudices. The men are rare who can, by an effort of the will, arrest the oscillations of sorrow and allow only cords of pleasure to vibrate. Pleasure is the mode of sensation, never the sensation itself, and it is not a paradox, but an incontestible physiological truth, to say that no pleasure exists which is essentially or necessarily a pleasure. The ideal of perfection in humanity would be to efface pain from the list of sensations, and to give all men the maximum number of pleasures. All the rest, as the philosopher said, is but dream and vapor.

Duration of Cement.—A short time since I saw two cement fillings, apparently oxychloride, that were inserted over 25 years ago, by some dentist in New Hampshire. This is the longest I have ever seen such an operation last.—M. G. J.

Conductor (on Georgia railroad)—"Do you mean to tell me, madam, that this child is not 12 years old?"

Madam (shortly)—"Well, she wasn't when this train started, but, land alive, there's no telling how old she may be now."

MOUTH MICROBES.

DR. B. L. COCRAN, BURLINGTON, IOWA.

Are the natural teeth saved at the expense of health and life? I fear many times they are. Not for the want of a proper filling material; nor the lack of skilful manipulation; nor is there a Dr. Sexton in it, poor deluded fellow; but, my friends, the great cause is the first step taken after your patient is in the chair, and that step is want of order, method, cleanliness—and the greatest of these is cleanness. Order, gentlemen, is the first law of heaven; method is an absolute necessity for the extermination of evil, and cleanliness second only to Godliness, by which the natural teeth can be saved, and our patients not suffer in health and perhaps life. My claim is made on the ground work of the germ theory, to make a broad assertion, and I am almost persuaded to believe true, the dental chair is a positive source of contagion. In my effort to sustain this, I ask your honest, earnest consideration. That germs do exist none can rightfully deny, and that pathogenic germs work destruction to human organism none who read and reflect will doubt. That the germ is not a part of our birth is an established fact; but that we are born with organs that may become favorable soil for the home of the microbe we feel well assured. That the seed of suffering and death are sown, we think has been proven beyond question, and if sown it is our duty as physicians to look well into the why's and wherefore's. Why do the germs exist, and wherefore shall we look for power to battle with them? Why the pathogenic germs exist I cannot tell; as to the battle, man must be the ruler, and the microbe must submit. The microscope, the grandest of all known instruments, has given us the knowledge of the organism, and man's intelligence is fast finding the road to their destruction. We may not be able to destroy all pathogenic germs in the world; but we will in time find as sure a specific as has been found for Anthrax and several other diseases of germ origin. The pathogenic germ is man's enemy. The benign germ his friend. Bacteria are necessary; in fact, our farmers would have a waste desert without them. Thousands and millions of bacteria occupy different parts of our bodies, and undoubtedly for good. Even the eye is a home for them, and digestion is certainly dependent on the family of benign germs.

So much for our friends; now for our foes. There is no part of science more interesting or of so great importance, to-day, as the study of pathogenic germs. So full of positive concern to all mankind, it is strange, indeed, that progress has been so slow in this department of science, on which health and life depend. In 1675 a German first saw bacteria and now, after more than two hundred years, we are beginning to see the cause of contagion, and how easy it is to transmit a

pathogenic germ that may mean suffering and even death. It is through the work of germs that milk, fruit and vegetables sour,—butter spoils, and flesh and water become tainted. This is not all, for living plant, and, in fact, all there is of life, is at the mercy of the bacteria family. If bacteria exist in the bodily excretions, the armpits and unwashed feet, what must be the condition of an uncleanly mouth or the mouth of the germ stricken individual? Simply a bacteria hot house. The fluids of the mouth in composition and temperature are favorable as a culter medium; that is, they contain the elements and have the temperature to encourage their existence. Decayed teeth, foul breath and bad stomach are the small evils, while lowered vitality and death the final result. I say death, because it is not only the benign germ that is found in the mouth, but the genuine pathogenic germ. It is unreasonable to claim that here may be found the bacillus tuberculosis, the germ of syphilis and undoubtedly many we know not of? When we think that fifty millions may occupy a space not larger than the period used in printed matter, is it any wonder these small, but mighty beggars go unnoticed till they have become an army in numbers? for you know they have a wonderful power of increase. It is stated on good authority that starting with one in a favorable medium, it may divide into two in an hour, four in two hours, eight in three hours, and in twenty-four hours will amount to millions. You can from this have some idea of their power of multiplication. They seem to have the live-forever quality, and never grow old, nor pass into second childhood. Bacteria, as a rule, are colorless, so they have every advantage over us. We are in the dark till through sunlight the microscope comes to our aid. To be seen with satisfaction, they require an amplification of 1,000 diameters, an ordinary man magnified with such power, if standing, his head would be a mile above the ground he stood on. All can see them who will take the pains, and careful work will demonstrate their power to multiply and destroy. While it is best to be conservative in all things, we must not stand still when health and life are in jeopardy. Microscopists do not claim bacteria as the cause of all disease, yet through the labors of a few devoted to the greatest of all instruments, we are constantly being shown disease after disease of parasitic origin, till we are almost ready to believe this family of dwarfs are at the bottom of all sickness and death. The pathogenic germ is not a modern invention. As far back as history carries us, we find this invisible hand at work only under a different name, at one time thought to be the anger of the gods, again a visitation for unfaithfulness, while, in truth, it was the same enemy of man, pathogenic germs. Had the men of those frightful periods been microscopists instead of being blinded by superstition, thousands of

lives could have been saved. But we need not go back into history; the ignorant and weak of to-day look on these visitations as the "hand-writing on the wall;" the greater the death rate the louder they think the call, when, instead of ascribing the calamity to the supernatural, if they would take hold on the tangible and searchable, use intelligence and the microscope, they would find cause, effect and remedy in this world within our reach. The foes are no longer hidden.

Day by day brings to us knowledge of a new field the microbe is working. The first septic disease scientifically traced from beginning to end was the silk worm disease in France in 1865 to 1867. Following this came Dr. Koch's discovery of bacillus, anthracis, then the Listerian method or Antiseptic surgery. In the spring of 1882 Dr. Koch gave to the world the startling news that he had traced tuberculosis to the bacterial family. That the bacillus of tuberculosis is the only cause of consumption is now an ocular demonstration, and not a theory of which any one in doubt can ascertain with a good microscope and technical skill. Here, gentlemen, is the germ to which I wish to call your especial attention. I am well satisfied there are others that would engage our attention; but to the bacillus tuberculosis I wish to direct you at this time.

Understand that this, one of the smallest of all living things, does not come into existence spontaneously, nor does it develop in nature outside of the living body. When we become educated as to the working of this bacillus and understand that it is common to man and domesticated animals, and that it can be transmitted from one to another, then can we hope for prevention instead of cure. None are born with tuberculosis, and what we understand as hereditary predisposition is that the lungs may under favorable conditions become a fruitful soil for the bacillus tuberculosis. These living things are endowed with the peculiar quality we call life, and reproduce their kind, though they have no means of themselves to move from place to place; but are carried by the air, or in the food, or from one mouth to another. We are all forced by necessity face to face with this enemy of health and peace, and it is simply their power of attack and our power of resistance; or in other words, if at birth we are endowed with organs proof against the bacillus, of course not including accident, man is most wonderfully constructed and balanced. So true is the balance that often without our knowledge it is thrown out of balance. When once out of balance the invitation is to some parasite to enter and play havoc. In my opinion nature would soon right herself were it not for this ever-present devouring element.—*Iowa Transactions.*

CONSUMPTION PROPAGATED BY THE DENTIST.

DR. B. L. COCHRAN, BURLINGTON, IOWA.

Bacillus tuberculosis is not developed outside of the living body. Tuberculosis, or what we call consumption, is entirely dependent on the working of this microbe. There is no doubt but that the majority of mankind are constantly fighting a battle with the bacillus tuberculosis inoculated by food, air and the dentist, and when inoculation occurs through the agency of a dentist, a fatal result is almost certain, while the germ introduced by food absorption or breathing may not result in consumption. Dr. Koch has proven that animals fed on tuberculous food that resisted the attack of the bacillus, yet by direct inoculation soon died of consumption. So with man; he may resist the germ in his food or those he breathes, but when direct inoculation occurs by means of an instrument in the hands of a dentist it is a certain fatality.

Fortunately, the majority by their very nature and lung condition are sufficiently strong to throw off the deadly bacillus, but where there is a predisposition and direct inoculation occurs, tuberculosis is a certainty. Pathogenic germs require proper conditions of temperature, light, air, etc. We know that people who live a natural outdoors life on proper food are as a rule free from consumption, yet perhaps half who are of sedentary habits die of tuberculosis, a great many of whom might be saved by proper sanitary measures.

We, as dentists, have undoubtedly been sowing the seed, year after year. Yes, I admit that is saying a good deal, but stop and think; what is the condition of the substance in which the bacillus tuberculosis is found? A thick, ropy, tenacious mucus, and it must pass through the mouth, and its nature will cling to the smooth, not to say the rough surface of the teeth. Here it lies, the mouth offering it every advantage for its existence. It is not unreasonable to claim that in consumptive persons the substance thrown off the lungs highly charged with the germ may cling to and remain about the teeth, and in operating on those teeth, your instruments, mouth mirror, fingers, in fact everything used about that mouth are very liable to carry away on them the secret foe hidden from the unaided sight. Your next patient, though free from lung complication, yet has the predisposition, or I should say the lungs in such condition as to offer the bacillus a working field; if in such condition, what must we expect? Nothing short of inoculation, which in from three to six months will seal the fate of the person who had confidence in your ability to not only care for the teeth, but protect him or her from contagion while being operated on. You certainly do not doubt the existence of the bacillus tuberculosis, and if it does exist you cannot question the possibility of

its presence in the mouth of the consumptive. If in the mouth, you dare not deny the probability of its being on your instruments, your rubber dam, your mouth mirror, about your finger nails and everthing used in that mouth. If on these articles, you must acknowledge when placed in the mouth of your next patient, if susceptible to the influence of this germ, inoculation is almost certain to occur. This, gentlemen, seems to me to be a fact, cruel as it is; but I am happy to say that the bacillus tuberculosis never need be transmitted from one mouth to another. We are exceedingly fortunate in this particular. Various substances and methods are used to destroy them, the most certain of which is *flame heat*; but as flame heat cannot be used on mouth mirror and such articles, I present the following table prepared in 1882 by Jalan de La Droix. It shows the parts of water to one of the substance.

Alcohol, one in.....	30
Eucalyptus, one in.....	308
Carbolic Acid, one in.....	1002
Thymol, one in.....	2229
Oil of Mustard, one in.....	5734
Salicylic Acid, one in.....	7677
Bi-Chlo-Mercury, one in.....	8358
Sulphuric Acid, one in.....	16.782
Iodine, one in.....	20.020

So, with flame heat and the substances named in this table, we have the means at hand to destroy this mighty ruler, and if faithful to our trust not a score can be placed against us. I feel sure in the near future it will be greatly to the loss of the physician and the dentist who neglects to use antiseptic treatment of instruments, appliances and everything used about his patient, even to his hands. The value of such a course can be better appreciated after consulting the report from the Maternity Hospital of New York.

I will here give you the course of protection I have been following for some time, and if there is a better or more certain method to remove my trusting patient from the danger line, I shall be pleased to know it. First, my rooms are daily aired for at least thirty minutes, however cold. As soon as my patient is in the chair, I wash my hands with soap and clear fresh water, and then rub about the finger nails a solution of one in five hundred Bi-chlo Mercury and glycerin. Never use the same water for the second washing. This insures to my patient clean hands free from germ infection. My operating chair is absolutely clean and free from dust, beaten out every morning. Never allow the same napkin on the head-rest for the second person. Use the fountain spittoon if possible; if not, then wash out the spittoon with Bichlo Mercury one in five hundred every night and place out of doors till morning. I think the spittoon a great evil unless strictly and

carefully taken care of; simply washing it out will not do. If it has been used by a tuberculous person the sputa will stick to the sides of the vessel, and the next day from a little jar will rise in the shape of dust to be inhaled by your patient or yourself. So the absolute necessity of using a powerful germicide. Never allow bits of cotton, bibulous paper, spunk or the like to remain on the floor about your chair, or in the office. Have a waste basket, put everything of the kind in it and have it carried out every evening; or better, put it in the stove. When you take up your mouth mirror wet a corner of a napkin with a 1000 solution of Bichlo Mercury and wash the glass, handle and all. Your instruments of every description you have ready for use out of sight in tight drawers; after using them you or your assistant should give them thorough attention and destroy every living thing on them. I use and advise a large bunsen burner and every instrument that is touched, good, bad and indifferent, must pass through at least five hundred degrees of flame heat. 212 degrees it is said will destroy the germ, but five hundred flame heat I am sure will. My instructions to my assistant are if she finds an instrument out of place, take it for granted it has been used, and pass it through the flame before returning it to place.

Your chip blower and syringe should have the same treatment. Rubber dam should never be used the second time, not even for the same person, and don't use the rubber band to hold the dam in place, for fear of scalp trouble; better punch a hole in two corners and use a linen thread tied behind the head; it is perfectly clean and more comfortable to your patient. If you have material on your bracket that has not been about the patient's mouth, or handled by you while waiting on the person, let your assistant put it away or wash your hands in the mercury solution before you touch it. Impresson cups should always be passed through the flame after or just before using. To be safe, and honest to your trusting patient, never use anything till it has been passed through the flame or treated to the mercury solution.

Be over cautious rather than under cautious; no one ever suffered from a dentist being too careful, and don't be afraid of the profession running away with the bugs; better run away with them, than have them run away with our patients — *Iowa Trans.*

Type-riting.—Evry one who puts words on paper shud no what useles lumber ther is in English spelng; shud no that silent, dubld and irregular leters cud as wel be dispenst with as American judges and lawyers dispens with enormus wigs which their English brethren wear in court; that all flologists favor reform of spelng; that only inert conservatism oposes it, and that ther is a good time coming, when 800 taps of type-riter keys wil spel out as many words as 1000 do now, when ther wil be no uncertnty about it, and two years of sbeling-book drudgery saved evry child.—F. A. FERNALD, in *Type-writer Operator*.

TEETH WITH DEAD PULPS, WITHOUT FISTULE, AND THE FILLING OF ROOTS.

DR. J. MORGAN HOWE, NEW YORK.

In the consideration of the subject I shall not weary you by attempting to be exhaustive, but will touch on some salient points concerning which there is perhaps the greatest disparity of opinion. Leaving our special consideration of teeth whose pulps have been intentionally devitalized by the dentist, we have those whose pulps have been dead for an indefinite period, presenting various phases and phenomena which ought to be interesting, and are certainly troublesome and disconcerting to the practitioner. One prerequisite to the successful treatment of all teeth whose *pulps are dead*, and one which seems to be too little appreciated, is to obtain as direct access to the apical end of the pulp canal as is practicable by drilling or cutting away any portion of the tooth that obstructs, or makes such access more difficult. No part of the tooth need be recklessly sacrificed; but no hesitation should be felt in cutting away sufficient to permit the most thorough removal possible of all disorganized matter from the canals, and the most perfect possible filling of the canals afterward. Of what benefit can it be to spare a portion of enamel or dentine which in any degree prevents such necessary procedures, and thereby increases the probabilities of future irritation of peridental tissues, and may cause the ultimate loss of the tooth? The sacrifice of a large part of the crown of any tooth, if necessary to attain the end, would be preferably to jeopardizing the health of the root. These remarks, however, are not intended as an indorsement of the practice of using engine burs in root canals any further than can be done with certainty that they are following the canal; and this would restrict them to a limited use, in merely enlarging or making more accessible the entrance into them. Educated fingers are often unreliable when the reaming tool is directly in their grasp, but if the engine hand piece is around the rapidly revolving tool, they can tell almost absolutely nothing as to where the point is going. The *greatest* care is desirable in all efforts to enlarge canals to avoid passing a drill through the root of a tooth at any other point than at its apex, and even this is undesirable unless *required* for drainage.

Dead pulps may be opened to external influences, or closed in by fillings, or by unbroken walls of dentine. In either, the teeth may be perfectly quiescent and comfortable, or may be the location of any grade of pericementitis. Disorganization of the pulp tissue takes place after loss of vitality, but *putrefaction* cannot occur without access of the micro-organisms which promote this process. This condition being fulfilled in an exposed dead pulp, it may always be assumed that it is putrescent. Free exit of this mephitic matter into the mouth,

with much more difficulty of its escape through the apical foramen may, and often does result in the tooth remaining free from perceptible pericemental irritation for an indefinite period, but when these mechanical conditions are relatively changed, the tissues of the socket suffer from contact of putrefactive organisms or the poisonous results of their existence, and inflammation comes as an acute or chronic process. Acute pericementitis under these conditions may generally be terminated in its earlier stages by removing all debris from the root canals, so as to reopen this obstructed vent. When it has passed the stage in which this procedure gives relief, non-irritant antiseptics, as iodoform in solution, or creosote, or an anodyne, as wine of opium, applied in the root canal may be effective, and counter-irritation applied to the gum is sometimes helpful, but these expedients are perhaps as likely to fail as to succeed; active constitutional treatment if intelligently used will generally be much more effective. The recognition that has been given to the efficacy of systematic treatment, in the new "American System of Dentistry," is, I think, a gratifying evidence of progress. Chronic pericementitis frequently results in abscess by the time the case comes under treatment, and a blind alveolar abscess is a condition that—I feel warranted by experience in saying—should be treated with *distinguished* consideration. Haste in permanently closing the aperture through which any abscess has had vent or drainage is always attended with risk of unfavorable consequences; and in the case of alveolar abscess, though immediate symptoms of irritation may not result, we are not on that account warranted in proceeding to fill the root till we are reasonably certain the abscess is destroyed, and the process of repair has begun. The cleansing of pyogenic tissues and the application directly to them—if that were possible in these cases—of antiseptic or other medicaments, would be no assurance that suppuration will not continue, and would not therefore justify proceeding as if it had actually been arrested, and the process of repair begun.

So much patience is often required in dealing with such abscesses, and so great are the difficulties of evacuating the pus and applying successful treatment to the pus cavity through the foramen of the root, that wearied with the monotony of unfavorable condition, we are prepared on such occasions, if ever, to resort to the use of some new remedy, which some one has somewhere recommended as the best of all. I have in this way discovered in what irritable mood the tissues sometimes are, that constitute the walls of a blind abscess. After using terebin several times for deodorizing or disinfecting root canals—which it does—an obstinate case of chronic, blind abscess, in connection with a lower bicuspid, induced me to apply this drug in the canal of the tooth. Within three hours pain was severe, and acute inflammation

resulted, continuing thirty-six hours before I succeeded in arresting it. A similar result, much less severe in degree, has several times resulted from my use of peroxide of hydrogen in efforts to cleanse blind abscesses, and eucalyptol recently roused the inflammatory fires, in an abscess of this kind, with such intense manifestations that I was persuaded to remove the tooth, whose chances of permanent usefulness I had previously considered rather poor. These may be exceptional instances of the action of these drugs, for they have each been recommended for the condition; they serve to illustrate my statement, however, that a blind abscess presents an irritable condition of the tissues, and had better be treated with medicaments incapable of producing such results as I have described. I have known carbolic acid to produce irritation in these, but not so severe and persistent as the remedies before mentioned. The treatment that has been most uniformly successful in my hands has been to remove all debris possible from canals, and if no purulent discharge can be perceived, dress loosely in the canal with ethereal solution of iodoform, covering with cotton, in which very little sandarac or other gum varnish is absorbed. If this produces no discomfort from pressure of purulent matter or mephitic gases in forty-eight hours or more, the same dressing may generally be sealed in with gutta-percha, and the case conducted thence by one or more repetitions to a speedily successful termination, with root-filling; but, if on cleansing the canal a discharge can be observed coming through the apical foramen, I would apply no medicament, but stop the cavity loosely with cotton, to secure drainage of the abscess and exclude food from the cavity, and later follow with the treatment before described, but being more careful to allow some discharge by applying the dressing loosely.

Ordinary, blind abscesses will generally be cured by such treatment without unusual delay, but when suppuration has been long continued and the apex of the root is denuded of pericementum by the destructive process, the chances of cure are much less, because the end of the root acts like a foreign body in the tissues; in many cases it is eroded by the purulent accumulations, or has granular calculus deposited on it, and in most cases, whether these latter conditions are present or not, is an irritant which tends to promote continued suppuration, so that the most certain way of effecting a cure is to amputate the portion of the root thus affected. I have always heretofore accomplished this, with a bur, with the tooth *in situ*.

When a dead pulp is sealed in from external influences, the tooth may remain for years without giving perceptible offence to the surrounding tissues, and unnoticed by its owner. During this time the pulp has been disorganized; but, as before remarked, putrefaction has

not taken place unless the micro-organisms peculiar to this process have had access to the pulp canal. I infer that during the period in which the nutrition of the pericemental tissues is not affected, *bacteria* are not present, but that irritation, inflammatory changes and suppuration are easily accounted for by the theory that organisms or spores have found entrance through the apical foramen to a condition so favorable to their proliferation, and that the immensely multiplied organisms themselves, or the poisonous products of their existence, become the means of injury to the periodontal tissues.

When a dead pulp, sealed and without external change of condition, becomes a cause of irritation, whether immediately after devitalization or indefinitely later—following a period of quiescence—I infer that bacteria or spores have been brought to the apical foramen, in the blood or otherwise, and that to their agency is due the changes which have caused inflammation or suppuration. It is noticeable clinically that enervated conditions, or systematic debility favor the access of such inflammations, which frequently occur after long periods of immunity, notwithstanding the presence meanwhile of the dead pulp. But perceptible irritation is not always in these cases the beginning of injury; we notice this peculiarity, that pus is often already formed when the patient applies for relief, and that the common and best procedure,—drilling a vent,—yields a purulent discharge, though the inflammatory manifestations may have been present only a few hours. With these, and those in which the dead pulp is exposed, chronic abscesses, with considerable destruction of tissue, may be formed at the apex of the root, without a perceptible inflammatory process, and the real condition perhaps be discovered only when acute symptoms lead to diagnosis and treatment; as if bacterial proliferation in such favorable condition were capable of producing suppuration without the phenomena of inflammation preceding, but coming after as a result of the extension or acceleration of the former process.

Since 1882 I have practiced the method suggested to me by Dr. Bodecker—since published by him—of making an opening, just giving access to the pulp cavity, and without the least effort to remove disorganized matter, introducing quickly some solution of iodoform in ether, or ether and alcohol, on a loose tent of cotton, and sealing immediately with gutta-percha. After three or more days the root canals are cleansed and dressed with the same solution, and again sealed, and a few days after this second application the filling of the roots may be accomplished. By following this method I have found such exemption from irritation of periodontal tissues that I may say there has not been a single failure; the few instances in which some pain followed opening the teeth resulted, in my opinion, from

my undue confidence leading me to remove some of the pulp debris before making the antiseptic application. In these the pain subsided in an hour or two after it began, and without treatment, or any subsequent unfavorable results. These latter incidents seem to me to be strong additional evidence of the power of iodoform to prevent the progress of putrefaction and the pericemental irritation resulting, which is notably so difficult to arrest; for before the use of iodoform in these cases I had almost never known this inflammation to yield to treatment satisfactorily; but with such results invariably following this preventive method, I have for a long time regarded the opening of such teeth as an operation attended with no risk. I do not hesitate to open any such tooth that needs treatment. I have already suggested an explanation, that in a dead pulp causing no irritation putrefaction has not occurred; but admission of air and these life germs cause it to begin immediately, and the bacteria or poisonous products of their life produce the irritation; and as they are also the organisms of suppuration, the latter is difficult to prevent when inflammation is commenced under such circumstances.

Iodoform fulfils the requirements, and does not produce any irritation in concentrated solution, which cannot be said of other substances that approach it in antiseptic power. If disinfection or changing of a substance that is poisonous to an innocuous condition, were what we require, how shall we account for the fact that poison has been in the root for years and has not irritated the peridental tissues, but will do so within a few hours after admission of the atmosphere unless measures are employed to prevent it? Or if sulphuretted hydrogen is the cause of the disturbed nutrition we have to fear, how can we account for the fact that the vent which would be so necessary for its escape is shown to be unnecessary?—*N. Y. Trans.*

AN INTERESTING CASE OF LOCAL ANESTHESIA.

The patient had fallen from the top of a car recently and slightly injured his spine, but of this I knew nothing at the time of my operation. I injected the usual amount of hydro. chlo. cocaine for the removal of a root. In about three minutes my patient remarked that he felt a numbness over that side of the face, which extended through the arm down to the hand of the same side; soon after which he began feeling sick, when I noticed a change of color of his lips. On examining the pulse I found it reduced to about 60, and the heart itself showed a slightly abnormal action, indicating the effects of a nervous shock still present. The uncomfortable feelings soon subsided, and he was left in the care of a physician on account of his late accident.

St. Thomas, Ont.

H. H. WAY.

TREATING DEAD PULPS.

DR. C. T. STOCKWELL, SPRINGFIELD, MASS.

Open well into the pulp chamber ; adjust the rubber dam or not, as circumstances may suggest ; remove all debris as thoroughly as may be ; after doing this, inject H^2O^2 into the canals ; wait a few moments and note the bubbling that is pretty sure to follow ; wipe out the cavity with absorbent cotton, and again inject more H^2O^2 ; *repeat the application of H^2O^2 thus till it ceases to manifest any action.* If a fistule exists, or if it is deemed advisable to establish one as the first step in treatment, all possible effort should be made to force the remedy through the apical foramen, getting its manifest action on the pyogenic tissues at the fistulous opening. If it cannot be carried through the root to this tissue, the injection may be directed through the fistule. The next step is to dry the cavity as thoroughly as absorbent cotton will render it, and immediately saturate the canals with fresh bichloride of mercury— $\frac{1}{1000}$ strength. After the bichloride of mercury has remained in the cavity for a few moments, remove the surplus and thoroughly bathe it with Sander & Sons' extract of eucalyptol, making that the vehicle for a considerable quantity of iodoform. Eucalyptus oil is perhaps equally good, though I have not tried it. I then warm fine delicate points of base plate gutta-percha, and dip them into a solution of iodoform and eucalyptol, and carry them into the canals, filling the apex thoroughly. I usually fill the canals and pulp chamber entire in this manner ; but in the more suspicious cases I frequently vary the treatment as follows : First, fill the root canals, or the upper portion of them, as above, with gutta-percha dipt into the solution of iodoform and eucalyptol ; then fill the remainder of the canals and the pulp chamber with cotton, moistened slightly with eucalyptol and loaded as heavily as possible with iodoform, sealing this combination in the pulp chamber with gutta-percha. The crown cavity may be filled with such material as conditions indicate as regards permanency, etc. This, stated as concisely as I am able to do it, is my present method of treating practically all cases of "dead" teeth. Besides the advantage of being able to treat and fill nearly all such cases at a single sitting, the results are apparently better than by any other method I had previously adopted. As stated heretofore, I have yet to meet a single case where anything but satisfactory results have followed.

Please note two things specially. First, the extract of eucalyptol is the manufacture of Sanders & Sons, Australia. With no other preparation have I had any success. The ordinary preparations will be as variable as the stores at which you get them, and none of them can be said to be extract of eucalyptol. This, at least, has been my experience. Second, note the fact that no carbolic acid is used in any part of the operation.

I do not claim, by any means, that carbolic acid has no place in a dental office. Neither do I claim that good results may not be gained by its use in the treatment of pulpless teeth. What I wish to be understood as claiming is that better results may be secured by other means, and, more especially, that it should never be used in connection with the other remedies named and embraced in my method of treating these cases. If carbolic acid is used before the application of the hydrogen peroxide, bichloride of mercury, eucalyptol or iodoform, it would largely, if not entirely, destroy their good effects by its coagulating influence; thus practically sealing the entrance to the all important tubuli of the dentine. The penetrating effect of the strong antiseptic remedies used would thus be cut off, and the permanency of the operation greatly endangered. The pulp canals would, for a time, be rendered aseptic; but the entire body of the tooth, especially of the dentine, would remain septic or subject to septic action. Carbolic acid is not a penetrating agent, and is only temporary in its effect.

Dr. Howe objects to the use of gutta-percha as a root filling, owing to its liability to "get shrinkage, even where used solid, in perfectly accessible places," * * * and also because "all root fillings of gutta-percha smell offensively in every fiber, after having been in place a year or more."

In regard to its liability to shrinkage, I had supposed quite the reverse is true especially "when used solid." All my experience with it—and I use it largely for various purposes—convinces me that it possesses the quality of expanding slightly rather than otherwise. In regard to its smelling offensively when used as a root filling, all that I can say is that I have not noticed it, for I never had an occasion to remove one.

Oxychloride of zinc undoubtedly makes an excellent root filling, in many cases at least; especially when the conditions of the pyogenic tissues are such as to admit of its use. I used it, almost exclusively, previous to the adoption of my present method. That oxychloride of zinc *per se*, however, possesses "continuous disinfecting qualities" is extremely doubtful. The zinc chloride possesses active antiseptic qualities; but when it has once formed a chemical union with the oxide, in my judgment, it is as inert as a quartz crystal. The objection to its use, as a root filling, is its irritating action on the tissues beyond the apex of the root; and also because it does not possess that powerful antiseptic property that is found with iodoform.

I have received many letters that indicate, in the strongest possible terms, the successful adoption of this method by others than myself. One writer relates a most extreme case, and closes by stating: "I might give other cases, but it is sufficient to say that I have yet to record my first failure with this method when no other remedies had been used."

Another writes: "Of sixty-two cases which I have treated in this way, the past year, the only failures—that is where the fistule had not healed within three weeks after the operation—were too old chronic cases; one a superior incisor of eight years standing, the other, a first inferior molar of over six years standing." I should state that the author of the last statement usually establishes a fistule in those cases where none already exists. Also that many of the cases reported were those where the surrounding tissues were much swollen and inflamed, with pus also abundant, when the operation was commenced. I should hardly dare to record the detailed statements, regarding some of these cases, as given and now in my possession. The statement is made, however, that in a majority of these cases the treatment and fillings were completed at one sitting. In scarcely any instance has treatment extended beyond two sittings.

It is hardly necessary for me to add that these results are gained, in my judgment, as the result of, first, the *cleansing* action of H^2O^2 and, secondly, the powerful and persistent *antiseptic* properties of the materials used as a root filling. Were I to secure the same conditions as at present with H^2O^2 , and then to at once proceed to fill the root with chloro-percha, oxychloride of zinc or other non-antiseptic materials, I should not expect the same favorable results, especially in the treatment of abscesses without fistule.—*N. Y. Trans.*

DEAD AND DISEASED TEETH AND THEIR TREATMENT.

DR. E. S. NILES.

For convenience, I shall divide my subject into four classes:—

1. Teeth with central nerves and vessels extirpated, and free from internal and external septic infiltration, with the peridental membrane performing its normal function.

2. Teeth with their central nerves and vessels destroyed, and their decomposed remains unremoved, and septic infiltrations extending to the peridental membrane, which becomes inflamed at the slightest depressing influence on the general system.

3. The death of the central pulp, followed by putrefaction and infiltration of all the dentinal tissue, the cemental tissues infected, inflamed, thickened, and a connective tissue wall formed protecting the deeper parts of the alveolus. This wall is usually located at the foramina at the apex of the root, and is generally known as the "secreting sac," leading from which is the fistulous passage opening to the surface offering the least resistance of tissue. When this condition is allowed to continue for years, the root membrane is destroyed, and even the root itself is absorbed wholly or in part.

A tooth becomes dead when it loses its membrane as well as its central pulp. These teeth I have designated as the 4th class. Their destruction is rarely due to the death of the pulp by internal causes, but more especially from outward wasting of tissues, from calculus or diseased alveolar tissues, when without support such teeth may be called dead, irritating, foreign bodies.

In the four classes of diseased teeth mentioned we observe variable conditions, any one of which of the milder forms may be but the progressive stages of the same trouble, which if not arrested will lead to the loss of that tooth, if not to more grave results. A tooth if deprived of its central nerve and blood supply resists destructive agencies of decay by its chemical integrity, in so far as this integrity is not overcome by what may be called "greater chemical affinities." As it becomes septic, within the pulp-chamber, its destructive tendencies are two-fold; it is "a house divided against itself," and the only agents necessary to support and carry on the destruction of the tissues are water and air. The products of this change, as we find them, are derived primarily from the pulp matter, but later from the breaking down of the organic substance of the tubuli. The main portion of the pus, however, in the progressive stages, is derived from the diseased or infected tissues immediately at the apex of the root, the fistulous opening usually appearing on the surface of the gum, carrying or furnishing vent to the matter and gas to which it augments. The generation of gases accompanying the breaking down of the dental tissues is, for the most part, the same as those generated from decomposing organic bodies whose constituents are largely of phosphorus matter, as the brain, bone or fish. This gas I apprehend to be phosphoretted hydrogen. It is found also in closed cavities of decaying teeth, and is significant of decomposing organic and inorganic tooth structure into ultimate proximate principles, as lime, magnesium, phosphoric acid, or phosphorus, and probably the re-formation of other substances, as in the case of phosphoretted hydrogen.

If we are to weigh the questions of life or the death of an organ, our attention is first called to known arrangements of tissues, that involved in death and that living, and we draw our conclusions as to the vitality on which rests our chief reliance for support; we look at the condition of a tooth without central blood-vessel or nerve supply, and we see at once the only reliance for vital support is from the cemental tissues, and all treatment must be directed to preserve these tissues from the destructive processes progressing in the dentine. When once this infectious matter has invaded the pulp chamber and tubuli, the tooth becomes ever after an easy prey to these changes, and in no way can it be kept so free from septic influences as to prevent it from becoming septic.

For various reasons teeth do die, and we find dead pulps resulting from numerous causes, and though not always septic, they are liable to become so if at all exposed. It is well known that a devitalized pulp may not cause any irritation, either during death or for years after, but this cannot be regarded as evidence that such teeth should not be disinfected, cleaned and sealed up, but should be regarded rather as an indication of the power of the general health to take up or absorb dead matter. Such power, however, may or may not be present at different periods of life. For instance, a tooth may remain quiet for years, and then suddenly enter upon acute inflammation and terminate in a chronic cold abscess. The poisonous matter generated from the dentine having infected or poisoned the soft tissues, the system no longer able to carry on the absorbing process, it expels the matter and provides for future accumulation by a fistulous opening and a connective tissue wall around the infected parts.

We have thus described the second class of teeth named, and indicated the progressive stages of septic influences which render the tooth more and more irritating to the surrounding parts. We often find that the fistula, if probed, leads to a large cavity immediately at the end of the root, and the root, denuded of its membrane, furnishes a portion of the wall to the cavity named.

TREATMENT.—When the cause of the trouble and the conditions of tissue are well understood, the question of treatment is often simple. With the present difficulty and the means at hand, barring mal-formation of the roots, the chances of success are more than equal to any operation we are called upon to perform. As in all diseases of the system, if our patient is strong and vigorous, however long the abscess has existed, fifty per cent of success is assured. On the other hand, desired results are not so speedily obtained in more delicate or enfeebled health. In all cases, relief from pain is the first step in treatment; often an aching, exposed pulpy may, by the use of narcotics, be treated into rest and the pulp destroyed.

For the destruction of pulps, I have found for the present, nothing that meets the wants of the case so well as arsenious acid, though I am of the opinion that a better preparation can be prepared. That used by me is composed of equal parts of arsenious acid and the acetate or sulphate of morphia, made into a paste with carbolic acid or creosote. Right here is danger. Many inflamed peridental membranes are caused primarily by arsenic preparations getting through the apex of the root and creating dead tissue and aseptic influences. It is better to cause the patient a little pain than to run the risk of a diseased membrane. I have used nitrate of silver with very favorable results. It does not cause pain, and its destruction of tissue is immediate.

With the usual means, the roots are cleared of all the pulp possible, dried with hot air till there is no moisture ; not only the pulp canals, but the dentinal tubes should be dried as far in as possible, after which the alcohol may enter even to the inter-globular spaces. In filling, I make use of the well-known preparation of gutta-percha and chloroform. In the treatment of abscessed and septic teeth, of course a long cleansing process is necessary. I strongly oppose the method of opening through the apex of the root, as by so doing there is great liability of further infecting the tissues by means of the infected drill, though I use the drill to get a free opening as near the apex as possible. This done, the canals are washed thoroughly with warm water and dried with hot air, after which it is saturated with a solution of strong bichloride of mercury (five per cent), the opening in the crown being stopt with gutta-percha. This is repeated once in three or four days till there is no smell of phosphoretted hydrogen, and I am satisfied that the tooth is thoroughly aseptic, when it is sealed and filled as in the previous case.

After a portion of the peridental membrane has been destroyed, is it possible to render the cemental structure so aseptic that the alveolar tissues will harden about the exposed surface without irritation? Of course there is not assurance of success as in the previous cases, but in the mouth of the average person of health, the bichloride treatment should be tried both outside and in. I have been surprised at the results of the cases treated ; out of three, two have been successful ; the other was a case where I could hardly expect success ; so extensive was the trouble that three of the superior centrals had their roots partially absorbed, and the only course seemed to be extraction, which, after the operation, I did not regret at all. Though badly diseased and absorbed, the alveolus healed very quickly without treatment.

It is hardly necessary for me to say that my treatment for the fourth class of teeth named is extraction, as they are indeed "dead teeth" and "foreign irritating bodies."—*Independent Practitioner*.

PUT YOURSELF IN HIS PLACE.

DR. W. A. SPAULDING, MINNEAPOLIS, MINN.

How often are we called on to examine a mouth to see in what condition the teeth are ! Not being informed that the object is to criticise some other operation, either recently performed or of long standing, the patient wishes to know if this or that is all right, and how much such and such work would cost, etc.

We may find in the mouth some work we could criticise. It may have come from some eminent practitioner, who has had years of experience and advantage, and from whom we would look for perfec-

tion, if it were possible; or it may come from a beginner, a young practitioner who has just launched out into the great sea of usefulness, and withal hard work. It is brought to us by all classes and in all ways.

There are comparatively few mouths in which we can not find something that is not perfect. We see a cavity in a tooth; all the rest may possibly be in good order. We are told by the patient that Dr. So-and-so filled that tooth a week, a month, or perhaps a year since, and here it has come out. It may all be true; but he or she does not tell why the filling did not remain. They leave it in your hands to deal with as you will. They do not tell you that Dr. So-and-so advised a different class of work from what they were willing to have done. It might be for various reasons, personal endurance, physical or mental disability, perhaps a nervous child who would not submit to thorough work, or it may be from abuse or negligence on part of the patient, or perhaps they are entirely mistaken about its ever being filled. With all this you are left in the dark. Dr. So-and-so filled the tooth, and the filling has come out. How natural it is for us to condemn the work at once, without saying very much. Simply allow the patient to do the talking, and we acquiesce by remaining quiet. Would we not be acting decidedly wrong toward our neighbor? Would we be doing as we would wish to be done by? How much more that patient would think of you if you proved to him his error, and convinced him of the liability of the teeth to fail; for they are in his care and subject to his abuses, and are only "patched up nature" at best, and without care on his part he could not expect you to be more perfect.

As to estimating the cost of the work, I think we should be very guarded about stating a fixed price till it is completed, or so nearly completed that we may be enabled to fully comprehend all our services. No operator can tell exactly where the decay in a tooth is going to lead him, or what obstacles he is liable to meet with, until he has completed the preparation of the cavity. The tooth may be of a frail, brittle nature, and crumble away much more than we would have calculated; or we may find an exposed or dead pulp which we had not expected, all of which would vary the price of the operation.

No dentist should set a price on a piece of work already completed by another; for no one can measure the amount of labor necessary to complete that work, unless he has stood by and seen the operation from the commencement to the termination.—*Dental Review*.

WHAT IS NON-COHESIVE GOLD?

DR. I. N. CARR, TARBORO, N. C.

In the June number of your journal you stated as a fact what I doubted in my article on gold foil, and before answering you, wrote to my friend, Mr. Hood, of Boston, for confirmation of what I had stated, viz., that the *so-called soft* gold, or, properly speaking, *non-cohesive* gold, is as its name implies; and that you cannot make it cohesive by annealing. You can produce a mechanical union, but that is not cohesion. I enclose his letter that you may see the authority I give for what I know to be a fact from tests.

BOSTON, July 3, 1888.

DR. I. N. CARR, Tarboro, N. C. :

Dear Sir :—In reply to yours of the 21st June, I will say you can use my name on gold, and I stand ready to back up all you said in the ITEMS. I do not know of any new points; you cover them in your article. The most cohesive gold made is as soft as Abbey's non-cohesive. However, when it coheres, it becomes hard. It is not the gold that is hard, but the process of welding makes it so. Take ten sheets of cohesive gold and anneal them; then pile them on top of each other and you will find one solid sheet of gold. Take the same number of non-cohesive, and put them through the same process, and you can separate them again. Now, one gold is as soft as the other, only one has cohered and the other has not. A cohesive filling made from cohesive gold can be rolled out into a ribbon of gold. Of course a non-cohesive filling would all come to pieces. As far as the gold is concerned they are of the same softness.

JOHN HOOD.

EDITORIAL REMARKS.

How we wise men differ?

As we understand Dr. Carr, the point he wishes to emphasize in his present letter is that non-cohesive gold is non-cohesive always; that "you cannot make it cohesive by annealing."

In his article in June ITEMS he says: "It can be made cohesive by annealing." Mr. Hood, certainly a very highly respected authority, says you can make non-cohesive gold cohesive by welding; but it will be hard. In Mr. Hood's supposed experiment with ten sheets of gold, the cohesive sheets will not become "one solid sheet of gold" without pressure; and the sheets of non-cohesive gold will become a solid mass with pressure. Dr. Bonwill, a short time since, exhibited before the First District Dental Society of New York, beautiful sheets of gold of various thicknesses, which he had rolled out of continuous sheets of Abbey's non-cohesive gold foil. The process, as we understand him, was precisely the same as the one supposed by Mr. Hood, which he says will not produce cohesion; but which Dr. Bonwill finds will

produce cohesion to a remarkable extent. Dr. Hood says, "of course, a non-cohesive filling would all come to pieces by rolling." We have taken a large filling that was made of non-cohesive gold, and by annealing the plug have rolled it out into a ribbon as beautiful and complete as one could wish.

But all this is irrelevant to the point raised in Dr. Carr's article of last June.

There, the prominent point was not whether non-cohesive gold can be made cohesive, but whether cohesive gold is generally as soft as non-cohesive. Dr. Carr there says: "All gold is soft in its natural state, and becomes soft by annealing. It can be made cohesive by annealing, and it soon becomes hard under the blows of the hammer."

We appended the remark:

"Some gold foil is soft *and also* cohesive. These two qualities combined is now the aim of all manufacturers, though all have not succeeded to the same extent." Then what is the controversy between us? Is it not the softness of cohesive gold? Mr. Hood says: "The most cohesive gold made is as soft as Abbey's non-cohesive. However, when it coheres it becomes hard. It is not the gold that is hard, but the process of welding that makes it so." Rather an ambiguous sentence, but no doubt the idea intended to be conveyed is that non-cohesive gold becomes hard by being made cohesive. And this is a fact, often; it used to be the fact almost universally. Some cohesive gold foil is so "tinny" in its hardness that, shaking a sheet held up by the gold carrier, it will rattle like a sheet of tin, or at least be kinky. A non-cohesive sheet will wave like velvet ribbon. It was to produce these two qualities in one foil, softness and cohesion, that occupied much of our time when we were building up our dental depot business, and dentists appreciated the result. But we are not the only one that produces such a gold. Mr. Hood does, and so do many other dealers.

Temperance and Life Insurance.—The forty-seventh annual report of the United Kingdom Temperance and General Provident Institution of London, a life insurance company with a general and a temperance section, reports the morality on whole life policies to have been as follows, viz.: "Expected claims in the temperance section, 282 for £67,547; the actual was for 219 for £66,600. In the general section 359 were expected for £82,275; the actual have been 363 for £82,705." It will be seen that there were 63 fewer deaths than were expected in the temperance section, and four more than were expected in the other. Thus do the significant figures of life insurance teach most impressively and effectively the wisdom of total abstinence.

The showing in favor of the total abstainer in America is quite as great.—ED
ITEMS.

TELLING WHAT WE KNOW.

DR. J. SMITH DODGE, NEW YORK.

Consider the process of making known to others that truth which has been gained in a laborious way. The two faculties do not necessarily go together. Because a man has learned, it does not follow that he can teach. On the contrary, the writer has known a maker of artificial dentures whose skill in all the details of constructing and adapting his work was simply marvellous, the admiration of all beholders. In his laboratory every tool was exactly right, and every process strictly methodical, while his results were always of the highest quality. And yet this man was wholly unable to describe his methods. In the attempt he would omit essential details, and at last break down in failure, saying, "I can show you, but I cannot tell." Now, the interests of science require that such a man should be silent. It is no impeachment of his one excellence that he has not a certain other excellence; but it is a grave fault if because he can *do* he therefore claims an undeserved privilege of *saying*. His words will be inaccurate, and his half-told truth will have the effect of a falsehood. But what a few do from fault of natural capacity, many do from negligence. Part of a process is told with the unconscious assumption that the hearer will supply what is not told, whereas, the hearer has no hint that anything is left to be supplied. Cases are stated without mention of surrounding conditions, though these conditions are essential to a just conclusion. But there is no need to multiply applications. It is among the commonest experiences of those who look into new dental discoveries or methods, that when they see the *thing* the first glance shows some essential deficiency in the description. "You didn't mention that," says the spectator. "Why, I thought anybody would understand that, of course," answers the would-be-teacher. A notable instance of this is recorded in the published minutes of this body for a year not very remote. A gentleman read a paper describing his method of treating exposed pulps. He was understood to claim that by this method he saved almost a hundred per cent of all cases which came to him. Such a claim, of course, called forth a brisk fire of cross-examination, which at last drew out the fact that the writer only attempted to treat such cases as he judged would do well, and of *these* he saved the large percentage named. So that the gentleman's paper demonstrated, not the success of his method, but the shrewdness of his judgment. These and a hundred other instances present the common characteristic of a confused mental conception as the cause of inaccurate teaching; and the remedy is to be found in mental discipline.

But there is a second cause which obscures our literature, and which is less excusable. Some of our instructors, who seem to know well enough what they want to say, fill their teachings with unusual or

even unknown words. Having constructed a theory to express, they next construct a language to express it in; forgetting, however, to furnish the hearer a dictionary of the new tongue. It is of course true that the necessities of *science* call for many new words, partly because new things are to be named, and partly because an accuracy of expression is needed, which is not easily obtained with common words. But much of this is already done, and the results are at our service, so that it is a positive fault to distort the statement of important facts by the use of obscure and uncouth substitutes for accepted words. If the gentlemen who find themselves subject to this temptation would study the dictionary, they would probably be surprised to find how amply the English language is already provided for all occasions, and their hearers would certainly be delighted at finding themselves able to understand every word the teachers say.—*N. Y. Transactions.*

FILLING WITH AMALGAM.

BY DR. W. G. A. BONWILL.

Dear Dr. Welch:—You have attempted to explain my method of using Japanese bibulous paper in filling teeth with amalgam, which is far from correct.

1st. I do not use the amalgam very dry. 2d. Do not place in very small pieces. I mix *my* amalgam in my hand, and never use forceps to drive out the mercury in advance, so as to make the alloy extra dry, as *has been done* with the Lawrence amalgam in particular, and a few others. Enough mercury should be present to enable the mass to be worked easily and plastically. Large pieces are placed in from the first and continuously; for they become very much smaller as soon as the bulb of bibulous paper, made large enough to fill the mouth of the cavity to be filled and completely cover the amalgam inserted, is once pressed on with a burnisher. At each compression, the surplus mercury, which is to be found at the edges, must be wiped off at once, and another effort made by hard pressure on a new piece of paper to drive out by pressure and rubbing over the surface with the burnisher. And so on till over full, when a flatter surfaced burnisher is now used, which enables you to keep the contour of filling perfect.

The burnisher should be used first to rub the fresh piece of amalgam on to the surface newly pressed free of mercury, or else it may not stick. *No serrated pointed instrument should be used in this method, but always points slightly oval like my mechanical mallet pluggers, to spread the amalgam and compress at the same time.* My language and description is so plain in the original article, I ask its second and third reading and study. It will be found in the March number of *Dental Cosmos*, 1888.

REPLY TO DR. MILLER (OF ALTOONA) ABOUT MATRICES FOR AMALGAM FILLING.

My dear Dr. Welch :—The very complimentary remarks of Dr. Miller, published in *ITEMS* for May last on my method of using Japanese bibulous paper for placing in amalgam fillings with his advice that I should use his matrices, etc., is very gratifying. I must beg leave to be at variance. The Dr. admits that I am not only capable of doing without the matrix in such work, but very much more than I state. It is to the average operator he speaks and not to me directly.

Now, if he will but once try, without the steel matrix—such as he has invented—the simple plan of using gutta-percha on the buccal and palatal or lingual walls of the teeth to be filled as a means of preventing the escape of the plastic mass while being compressed under Jap. Bibulous paper, which pieces are held in position by an old rubber-dam clamp, flattened for the purpose ; or by the fingers in many cases ; or by placing a wad of bibulous paper ; or the side of the napkin ; or your fingers in other cases, he will find equally satisfactory. All crown fillings can be placed in without trouble, and with little loss of material, and not the danger of displacing the mass when completed. I have tried the matrix, but none answer the bill so well as simple G. P., or without anything but paper. When two or more proximal cavities are to be filled continuously, the whole space is filled in and afterward immediately cut apart with an exploring needle, with point bent at right angle, commencing from the cervix up to grinding surface, keeping the finger on the filling to prevent any displacement, finally separating with a thin steel saw and finishing at once, quickly, by contouring on all sides, always completing the articulating surface first and then dividing, and smoothing with wet bibulous paper in the pliers. Polish another day and clear overhanging edges everywhere. If this plan cannot be used, then try the matrix. First try without. You can do double the work just as perfectly.

W. G. A. BONWILL.

Dentistry.—Meyer Brothers' druggist says American members stand high in their calling. Some may think we have a great many pharmaceutical societies in the United States, but we doubt if they outnumber the 140 dental associations. But the thirty or more drug journals show that the druggists have more periodical literature than the dentists, who are supplied with only twenty-three journals. The editors of these dental publications are on good terms, and one of them, the *ITEMS OF INTEREST*, of late, have been publishing the pictures of the rest. The July issue of *ITEMS OF INTEREST* has, as a frontispiece, a phototype of the editor of the *Independent Practitioner*. Some of the pharmaceutical journals seem to be ready to make pen pictures, according to their own liking, of the editors of their contemporaries ;

but we doubt if drug journals are anxious to publish a true likeness of their brother editors, as our dental exchange has done. The dentists have twenty-two colleges in this country, but the druggists have twenty-nine, including the departments of state universities.

Our personal experience with dentists has been limited, and not of a very pleasant nature; in fact, at times it was painful—yes, quite painful. Still, we believe the dentists are good and useful members of society, and we are pleased to note that American dentists are held in high esteem by their foreign brothers.

PAIN OBTUNDERS.

J. A. ROBINSON, JACKSON, MICH.

I believe I have tried all the obtunders for many years that I could hear of, and at last I fell back on what I had used for more than twenty years, viz., carbolized potash, known as "Robinson's Remedy," when prepared in a suitable and convenient manner.

In a paper I gave to the profession a long time ago, I said the preparation coagulated the serum in the tubuli and cut off all communication with the pulp—this was my hypothesis. I judge this is true, because no one has ever disputed it. I wrote about carbolic acid in some of the journals years ago, that carbolic acid only paralyzed the pulp and did not destroy it. This can be proven by any person who is familiar with its use. Potash is unbearable when used alone. It is what is called *caustic*, but the potash turns the *fatty part* into soap at once, and is nearer like the actual cautery than any known substance, for it acts instantly when brought in contact with the pulp. Of course, it burns and forms a thick seat, and the healing process always (like all life) comes from within. Being paralyzed by carbolic acid, of course it mitigates the suffering, because all paralyzed bodies are free from pain, or common sensation of pain. The one fact remains *that it does the work*.

Since I began this I have been called, fortunately, to two lady patients—one has just left my chair—labial surface front incisor running up under the gum and extending more than one-half way round the tooth. She would not even let me put an instrument to it. I applied half a drop on a little cotton, which caused a little pain at first, but I heard no complaint; and in eight minutes I could cut out all that soft, leathery decay like rotten wood, without any pain. I then made another application and discharged the patient till tomorrow at 9 o'clock. The gum will be a little sore, but I expect to excavate and fill *without pain*. If you have never tried it for pyorrhea, try it. I hope this may do the reader some good; if it does, *say so!*
—*Archives*.

THE SOURCE OF TARTAR.

The following is the explanation given by Prof. Peirce to enquiries of Dr. Barker.

PHILADELPHIA, Sept. 5th, 1888.

EDITOR ITEMS OF INTEREST.

Dear Doctor :—The letter read this morning through your hands from D. W. Barker, M. D. S., made me first query where he procured the M. D. S., and for what it stood. I do not see how any one practicing dentistry in Brooklyn, N. Y., could be so unfamiliar with the location and source of lime-salts, when spoken of in connection with pyorrhea alveolaris. But if it must be explained, let me say that in the extract quoted I had reference only to the accumulation found on the roots of the teeth and within the sockets of the alveoli. Here and in the condition we find the structures in this disease, the roots are in close contact with a thickened membrane (peri-dental) filled with congested vessels, many of which are constantly being relieved from this hyperaemic state by the colorless portion of the blood weeping through their walls. This fluid carries with it the mineral salts when they exist in the blood, and hence it is the most natural result to have it deposited on the first solid substance with which it comes in contact, and so termed sanguinary deposit or tartar.

The further question asked can also be explained in a few words. "How the lime-salts (*i. e.* tartar) gets from the blood on to an artificial dentine in an edentulous mouth," I should say by a very similar process, except that instead of being poured from congested vessels into the alveolar socket, it is taken from normal vessels by the parotid, sub-maxillary and sub-lingual glands and through their ducts it passes into the oral cavity as *saliva*, and there it meets with the teeth instead of the roots of the teeth, and on this it is deposited in lamina of *salivary calculus* or tartar.

C. N. PEIRCE.

The Salutatory of Dr. Sudduth.—This savors too much of the stereotyped "long-felt want" which the new journal comes to fill. "The trade journals of the day" will smile audibly and continue to distribute "monthly catalogues," wondering at the incongruity of the above quoted sentences, where one line speaks of the "mission of working for the best good of the dental profession," and the next gives a school-boy's "back-hander" at journals already in the field.

There is an old saying, found in a good book, which reads something like this: "Let him that putteth on the harness not boast as him that taketh it off." We commend it to the new syndicate and its editor.—*Editorial in Western Dental Journal.*

THE NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The members of the above organization are always ready to receive advice which is well-meant and has merit, either from individuals or from associations; but an editorial in the July number of the *Independent Practitioner*, in addition to some well considered remarks on colleges and their work, says: "Rumors are rife of disaffection, and the possible withdrawal of some of the colleges from the association." We are not aware of any such "disaffection," and we would suggest that just such assertions will obstruct the harmony of the association as quickly as actual misunderstandings, and the *Practitioner* ought to speak from actual information in making such observations or else remain silent. We can speak for four of the colleges belonging to the association when we say that not one word of disaffection or withdrawal had been heard till it was read in the *Practitioner*, and if disaffection does exist, members of the association would be quite as likely to hear of it as outside parties. The association, we believe, realizes its important mission in dental education, and will, as heretofore, steer clear of any action which would unjustly alienate a single college of its membership. There has not been, we have good reason to believe, any feeling among the colleges that "the organization deserves a still further trial." No such question has been raised except by the editor of the *Practitioner*; the members are at peace with one another, and expect to see the National Faculties Association enjoy a long and useful existence.—*Western Dental Journal*.

"THE PHYSICIAN AND THE TOOTHACHE."

The paragraph quoted from the "*Archives*" in your April ITEMS about Dr. Pecte's attempt to cure toothache by the heroic method, calls, I think, for comment. We in Europe are accustomed to look on American physicians as models of cleverness, and of the power of adapting means to ends; but what must one think of a man who not only commits the unparalleled act of stupidity and carelessness of attempting to pour *nitric acid* out of a bottle containing an ounce and a half into a lower molar, and then writes to a journal about it. About the best bit of unconscious irony I have ever seen is his remark, "I seldom lose my presence of mind." Let us hope for the sake of our common humanity he may never again lose it, for should he do so the man who found it would have the heart felt sympathy of,

—CHARLES RATHBUN, London.

A Singular Cause of Toothache.—April 4th last, in an attempt to extract a lower right third molar, I broke off the crown just below the alveolar border, and told the patient, a lady of about 24, to let it alone and in the future I could extract the roots easier than then.

To-day, at 9.30 A. M., she came in saying she had passed a sleepless night with excruciating "jumping" toothache; but could not localize it. I tried percussion and cold, but could not diagnose the trouble. I advised her to wait awhile, thinking she had a neuralgic pain, as she got her feet wet during the recent rainy days. At 11.30 A. M. she returned and said she could stand the pain no longer; so I extracted the roots, after splitting them apart; and *there* I found what was the cause; a bristle from her tooth-brush had penetrated one of the nerve canals, and was almost all in it, but enough protruded to allow pressure. I send you the roots with the bristle in position as I found it. Is this not an unusual occurrence? I send this to you, as I like your "ITEMS" best of all the four journals I take.

Waukesha, Wis.

J. R. BOYD, D.D.S.

[It was a fortuitous circumstance that the first time brushing her teeth she should have thrust this bristle into this root. She would be a good marksman to do it again.—ED. ITEMS.]

ORIGIN OF GOLD CROWNS.

Editor ITEMS OF INTEREST:

In the July ITEMS just received is an item from Dr. J. H. Harlan, of Bluffton, Ohio, saying he put on a gold crown for himself in the spring of 1879, and at that time thought it to be the first one made.

A record of work made by me, June 16, 1871, reads: "Thomas Beers, gold tooth on root, \$15.00." And this was *not* an original idea with me then. I had read (probably in the *Dental Cosmos*) a description of such a piece of work.

I made the crown from a five dollar gold piece, hammered out into plate, and attached it to the roots of a second left upper molar that had been broken in an attempt to extract some years previous.

It was made, as well as I now recollect, similar to gold crowns now made; but was not fitted very skilfully; but I think it did two or three years' service.

R. MATTHEWS.

Wichita, Kansas.

The inordinate vanity of some of the members of the Missouri State Dental Society is astounding. The crowding of their own papers forward, out of the regular order, to the exclusion of meritorious papers by visiting dentists who had come a long way to entertain the society, is anything but complimentary to their good taste or breeding. They seemed to imagine that unless they spoke on every subject before the meeting, the "society might think they had no opinion about it." Ex.

The Missouri Society is not alone in this exhibition of selfishness and self-importance of some of its members. It often transpires that the lightest brains come to the top.—ED. ITEMS.

For Our Patients

A NEW DEPARTURE.

DR. JULIUS DIENELT, ALEXANDRIA, VA.

The sons of Esculap we hear of late
 Have met in solemn council, and their clan
 Propose to wear a uniform of state,
 So, without trouble, we may find our man.
 We like the plan : for often in great need,
 When there is danger that a man may die,
 To get a doctor's help is difficult indeed,
 And all in vain you stretch your anxious eye.
 Now, should they all appear alike in dress,
 It's ten to one, that, while upon the street,
 You'll find the one you seek in your distress;
 For now you know him should you chance to meet.
 Now, brethern of the forceps, are we not a part
 And parcel of the glorious healing art,
 Acknowledged as a specialty or branch?
 Then why should we sit idle in our ranch?
 Be up! and plan some cunning, bold device
 That sure and swift will strike the people's eyes;
 So no one need hereafter look in vain
 For some one to relieve his maddening pain.
 Now, as we cannot meet in grand conclave
 Before a twelvemonth, or a trifle less,
 To give our views about a thing so grave,
 We now essay to reach you through the press;
 And, if you'll listen, we shall here disclose
 What uniform, or trade-mark, we propose.
 Beg thousand pardon! was it "trade" we said?
 How came it, that such blunder we could make?
 Ours is a science, not a craft or trade;
 Again we plead, forgive us this mistake!
 But to the point. We now propose and move,
 Resolved: That, as it doth behoove
 Us, one and all, upon mature reflexion,
 To so adorn our scientific section
 That one may tell a dentist without doubt
 When meeting him upon the street while out,—
 Be it resolved, that, on his head, forsooth,
 He wear a helmet like a monstrous tooth;
 A molar, with its grinding surface down,
 The wearer's pate inside the molar's crown;
 The fangs to point with apex to the sky;
 Believe me, brethern, this would strike the eye.
 As armament, a brace of forceps bright,
 In leather belt, should also be in sight;

A lancet, to adorn the helmet's face,
 Crossed by a plugger, would be next in place;
 While to distinguish to what school or set
 The wearer leans, when by our patron's met,
 The all gold dentist, we make bold,
 Should wear a helmet of cohesive gold;
 The man of progress, and of broader view,
 Of course, should wear a glitt'ring helmet, too.
 The crown of gold, the fangs in number, three,
 Should be of silver, platina and tin;
 And to complete the picture—let us see—
 A fourth fang of cement might safely be thrown in.
 The rubber man, to make his burden light,
 Might fitly make his tooth of crimson vulcanite.
 While mere pretenders—may it come to pass—
 Should crown their heads with naught but shining brass.
 Now let us add to this a uniform attire:
 A coat and vest of linen, spotless white,
 Black pants, with stripes as red as fire.
 Would this not be a gay and rather glorious sight?
 Then, on our next convention day,
 Like plumed sir knights to march along,
 With drum and fife in grand array,
 In solid ranks, ten thousand strong;
 What more could heart and soul desire?
 Or greater zeal or pride inspire?
 Now let us give our votes; but, if you deem it best,
 We'll drop the matter here, for what it's meant—a jest.

ACCURACY.

DR. J. SMITH DODGE, NEW YORK.

Accuracy must be at the core of all scientific advance, but which is most strikingly deficient in the mental processes of dentists. In this connection, accuracy means simply keeping close to the facts, whether they be facts of being or facts of relation. The scientific knowledge of the universe is like a Waltham watch, a complicated fabric of many parts, each constructed by a different man in a different room. The parts being done, the watch is done, on the one condition that each part is exactly right. If this is so, all will go smoothly together and keep perfect time; but if any one workman has made his piece a trace larger or smaller than the gauge, the piece will not fit and the watch will not run. So if any man reports, under the name of science, a fact a hair's breadth wider or narrower than the gauge of exact truth, it will frustrate some other man's observation and throw the whole group to which it belongs into confusion. But it is the characteristic of truth, exact truth, that it "fits all around." So that a fact accurately reported a thousand years ago will tally exactly with its correlative fact discovered yesterday.

With these preliminary generalities let us now consider more in detail several ways in which our art demands more scientific accuracy than it has habitually found in its votaries. But here let me disclaim the attitude of one who passes judgment on the faults of others. The difficulty of maintaining always that accuracy which is the vital breath of science is so great, that no man need hesitate to own he has many times failed in the endeavor. Certainly the writer owns it freely, for the faults which are to be criticised are best known to him from the efforts he has made—not always with success—to avoid them.

The first demand for accuracy, which the dentist is bound to recognize, relates to his own estimate of himself. When the Rev. Jasper stoutly asserts, "The sun do move," and preaches sermons to demonstrate that it is on the east side of the barn when it comes up and on the west side when it goes down, that dusky divine is beyond question perfectly honest, and his chain of evidence seems to him complete and unanswerable. His mistake simply is that he supposes himself fit to judge of things for which, in fact, he has no capacity. He neither knows the ample demonstrated facts which prove the rotation of the earth, nor has he the mental training necessary to understand the cogency of their meaning if the facts were laid before him. The difference is that most Americans are intelligent enough to know their own position in such things, and do not presume to question the consenting testimony of all those who are competent to judge. To this modest and correct self estimate Mr. Jasper is the exception. Now, among dentists the Jaspers are many. We are generally a self-satisfied and willful class, and each of us is apt to think he has seen all the human mouth has to show and is a little better qualified to judge of it than anybody else. While the fact is, as every educated man among us will confess, there are but few (besides himself) who can impartially observe, carefully generalize, verify by satisfactory experiment, and so add to the accurately ascertained science of our art. Perhaps this misconception was at first unavoidable. When the appeal was made to dentists to study their facts and lay a scientific basis for dentistry, it was natural the apostles of science should declare no man was fit to practice who was not a scientific man. And if this was the word, then multitudes of dentists who had honestly plodded along before and done much good, mixed with some unmeant harm to mankind, must decide whether to own themselves unfit for the work which fed them or to become "scientific." Of course, they decided on the latter. It was rather interesting and not too laborious to read a few books and remember the long words, to look over some plates and peep into a microscope now and then, and presently to select some one of those thousand fancies which swarm in all dentists' heads, and vent it decked

with learned terms as a guarantee of scientific standing. The hands, indeed, seemed the hands of science, but the voice was the voice of Jasper.

The root of the whole mischief lies in one ambiguity. Dentistry is an art, and is striving to become a science. And every dentist is bound to sympathize with this endeavor, to keep himself informed of all progress that may be truly made in it, and, *if he be competent*, to help it on. But it does not at all follow that a man's practice is worthless and he a charlatan because he cannot give a scientific account of what he does. There is many a man whom I would gladly have fill a proximal cavity in my molar, but for whose opinion on the electrochemical theory of decay I do not care a fig. And it would be infinitely more dignified and honest for such a man to listen quietly, doing what he has found good till something better is shown him, than to rush into speech or print with his crude and worthless opinions. They encumber the field and bring the discussion into contempt. But the manipulations of the dental art, honestly performed according to the operator's experience or that of his teacher, while they may be called old fashioned, will do service to his patient and win honor for himself, though he should declare himself continually a learner and not a teacher in science.

But supposing this selection to be somewhat fairly made, there remains much need to urge accuracy on those who are qualified to push the car of *Science*. And for these the subject may be divided into two branches: accuracy in learning and accuracy in teaching; the former covering the process by which the investigator ascertains scientific truth—the mental endosmosis, and the latter that by which he conveys to other minds the knowledge he has acquired—the mental exosmosis. —*N. Y. Transactions.*

Self-Praise is uncomely, thwarts its own ends, and repulses our best friends. "Let another praise thee and not thine ownself," is as good instruction now as when first written.

"Well," said an undertaker, "I'm not much of a fighter, but when it comes to boxing I can easily lay out any man."

A little three-year old noticing a cow one winter morning and observing her breathe, said: "Mamma, does the cow smoke?"

Tariff reform in Servia is drifting to the rear. An important tax on bustles has just been imposed by the government of that nation.

A recently published book on etiquette says: "Endeavor to select your guests with a sense of fitness." That is, do not invite a fat man to a slim dinner.

Editorial.

AN ARISTOCRACY OF DENTISTS.

We hear murmurings of discontent from dentists of Pennsylvania, that "the aristocrats have captured the State Society." This is an ungracious complaint. We have aristocrats in almost every sphere—even hod-carriers have their "upper ten," who are the consequential ones in their guild—why not have an aristocracy of dentists? But how can these aristocrats, either among hod-carriers or dentists, show their superiority and lead others by the apron strings, if there are no underlings? These dignitaries should not be expected to come down to an equality with ordinary members of the craft, and the latter should not presume to walk and talk in the presence of their superiors without a proper bending to their back bone. Both classes have their use: the aristocrat to exhibit the dignity of his calling, the other to take the crumbs that fall from the aristocrat's table. One of these Philadelphia courtiers of the dental profession said on a recent occasion: "I do not allow servants in my dental chair. I offended a rich lady only the other day, because, after I had finished some work for her, I refused to look at the teeth of her nurse. I sent the girl to another dentist, of course. The fact is, we must maintain our dignity."

And, as we have aristocrats in the profession, we must have aristocratic societies in which to put them. Like the swelling toad, they would burst if they were not given an opportunity to ventilate. Besides, such a society gives variety; its exhibitions are amusing, and its tendency is a proper lesson to the general profession. Such a society is necessarily and preferably small; but it is very select. By its dignified exclusiveness it repels the masses; but it is exceedingly enjoyable to the elect. And it would be wrong to say these magnates shut out common dentists; back seats are especially prepared for them, and a treasurer to receive their cash. Of course they will not presume to make themselves conspicuous—laughing stocks for intelligent gentlemen; and of course visitors from other societies and from all sources are expected to keep silent, unless they pay cash in advance for the time they occupy. Ah, the very floor of an aristocratic society is sacred; nothing admits you to it but money, the badge of the noblest aristocracy.

These unsophisticated dentists in the country towns of Pennsylvania who complain of this course of their State Society should remember that, while it disgusts them and makes an attendance on its sessions a bore, it does please the few who run it. Besides, if these complainants prefer a real State Society, let them attend and get it by their

votes; or are they afraid of being swallowed up? for these big dentists have great capacity. The Pennsylvania *was* a live, brainy democratic association, known everywhere for its broad, liberal, fraternal position and influence, for its usefulness to its many members, for the helpfulness of its reports to the whole profession, and for the able men brought to it from all over the country to co-operate in its sessions. It is now a notable body, or at least notorious. Who will say it is not the very Alderney cream of dental richness?—the concentration of refinement, estheticism and professional etiquette?—a learned, dignified, aristocratic conclave? For such an immaculate body to invite the co-operation of outsiders, as the former State Society did, would be preposterous. “Who are greater than we?” and therefore “Who can instruct us?” At the last session there was a strenuous effort by a few of the more liberal and intellectual to provide that, at least by a unanimous consent, a visiting member might be given the privilege of the floor. You ought to have seen the eyes and the heads of these guardians of their dignity swell! With indignation and holy horror it was voted down. One of the minority said he feared he was at a funeral, for these “No’s” sounded like the dropping of clods on the coffin from the sexon’s spade.

But it is hoped this was a false prophet. There must be a center of dental wisdom somewhere; it is strange we have been so long finding it. With respect to the world, we know this is the United States; with respect to the United States, it must be Pennsylvania, for so the great International has decided; and of course the center of Pennsylvania is Philadelphia; and here we find this pink of cardinalate elite.

The Pennsylvania State Society may well be proud that these mighty couriers of the profession are willing to dismiss the large numbers that once constituted its body, that they may be its august representatives. As we saw these princes of the dental kingdom the other day, in grand convocation assembled, these rare, high-toned, delectable canonicals made us awfully conscious of our inferiority, and that they were the supreme and sublime achme of professional dignity, wisdom, glory—and exclusiveness. Ah, it was a rare privilege to see these kid-gloved dignitaries wrap the State Society’s grand robe so gracefully about them, and stand to be admired! And we did admire them.

How our Office looks to others is an important item. It is well, once in a while, to come into it imagining it to be the office of a stranger, and thus see ourselves as others see us. We get so used to seeing ourselves it is difficult to see our faults, and the faults of our surrounding; we get careless and indifferent, and thus blind our eyes. Try our plan, and see if it does not open your eyes to something you have not noticed which might be improved.

THE MORALE OF OUR DENTAL COLLEGES

We hope we have been unfortunate in the colleges we have become acquainted with,—that those we have not visited are much better. But really we are ashamed of the habits and conduct of many of our college students, and of the apparent indifferences of many of the professors to proper discipline. The language, noise, and misbehavior allowed in the various rooms, the disorderly conduct even in the lecture room, the smoking and chewing tobacco unreprieved,—everything that detracts from dignity, thoughtfulness and decorum,—is often rampant. The plainest lessons of professional etiquette seem to be ignored. Any effort on the part of the few toward respectability, studiousness, and an earnest desire to improve by the lecture, is often met with pranks, interruptions and nonsense by those on the right and on the left, behind and before.

Sometime since we took a young lady to one of our dental colleges as a clinic. As we ascended the stairs, nasty tobacco spittle was every where, and the spittoons, placed in the corners of the stairs and halls to "accommodate" the users of the filthy weed, were revolting in the extreme. As we approached the clinic-room, the noise, profanity, and vulgarity of the students were frightful, and their rudeness, as the case was attended to, was disgusting. Of course, this was an extreme case; we hope, so certainly; no such conduct is allowed now, let us heartily believe. But cannot our professors make the morals of our colleges much better than they are? We have had many students in our office, but have never retained one that could not be persuaded to be a gentleman; and, of course, we required entire freedom from the use of tobacco. If all fathers and teachers would do the same, our boys would as easily become gentlemen as our girls become ladies; and these boys, when they become men, would have no more use than our women for tobacco.

It is too bad that everywhere, at all times, and in every thing, we excuse in ourselves as men, and allow in our boys, what would disgust all of us in lover, wife, or daughter.

Life and Work of John B. Finch.—Through the kindness of Dr. S. H. King, Lincoln, Neb., we have received this remarkable history. We would advise every young man, or one older, who would be enthused with self-sacrifice to dare and do for the right, to read this book. It is true, it gives us no adventures of the civil war; but it does show how one aroused to the wrongs of the rum cursed, the crimes of the rumseller and the fearful responsibility of the government, can sacrifice his life for the promotion of total abstinence by the individual, and prohibition by the government.

W. R. HOLMES, D. D. S.

See Frontispiece.

W. R. Holmes, D. D. S., was born at Spring Ridge, Hinds Co., Mississippi, Nov. 1, 1847. At an early age he moved to Memphis, Tenn., where the first years of his life were spent. He was the fourth son of H. J. Holmes, M. D., who became quite eminent, as a specialist, in the treatment of diseases peculiar to women.

In 1868 he made an arrangement with Dr. Coryden Palmer, at Warren, Ohio, to stay with him two years, as a student in his office, to learn dentistry. Here, under the guidance of Dr. Palmer, he received a most valuable and practical training. In 1870 he moved to Hazlehurst, Miss., and became associated in practice with his brother, Dr. J. P. Holmes, a graduate of the Ohio College of Dental Surgery.

In 1874 he graduated at New Orleans Dental College, and with his brother, Dr. J. P. Holmes, moved to Macon, Ga., and bought the location and practice of Dr. George W. Emerson, who had long enjoyed a lucrative practice. Here a pleasant and valuable practice was soon secured. In 1878 the two brothers, under the firm name of J. P. & W. R. Holmes, established the Macon Dental Depot, and began the publication of the Dental Luminary, a quarterly journal devoted to the interests of the dental profession.

About this time, also, they originated and began the manufacture of Holmes' mouth wash and dentifrice.

By the death of Dr. J. P. Holmes, in Sept. 1885, the firm of J. P. & W. R. Holmes was dissolved, and shortly after W. R. Holmes associated with him in practice, the depot business and publication of the Dental Luminary, Dr. J. M. Mason of Columbus, Ga., which partnership still exists.

The Fifth, Sixth, Seventh and Eighth District Dental Societies of the State of New York will unite in a joint convention at the Leland Hotel, Syracuse, Oct. 24th, 25th and 26th. The meeting will be called to order at 2 o'clock. A cordial invitation to be present is extended to the profession. An extensive programme has been arranged. Prominent dentists from Chicago, Baltimore, Cincinnati, Philadelphia, New York, Boston, Toronto, Newark, Albany and other cities have consented to take part. One-half day will be devoted to clinics and demonstrations of improved methods of work and new appliances. All the leading dental manufacturing companies have arranged to be present with a full line of their goods. Among the social features of the convention will be a banquet for the dentists and a reception for the ladies. It is expected that dentists will bring their wives. A Ladies' Committee has been appointed.

G. L. CURTIS,

Dental Depots and Patents vs. The Dental Profession.

—Dr. H. C. Meriam, of Harvard University, has given the dental profession an able paper on the evils of dental depots and patents.

Dental depots should be overhauled once in a while; it will do them good; yet they are a kind of necessary evil, for we could hardly do without them, and though they sometimes seem to lord it over us as a profession, they are what we make them or permit them to be. They are our servants, and if any one of them behaves incorrigibly, we shut its doors by ceasing to patronize it, and open one to our liking. We are the lords of the profession, not they. If we have anything to sell, we are not holden to them to sell it for us unless we so elect; for all the journals are open to our advertisements, and we can sell directly to dentists or through the depots, or have a depot of our own. As for patents, that is a vexatious question. When will it be settled? We observe each dentist settles it for himself when he has any valuable invention, and he generally settles it by ceasing his war against patents and getting one for himself.

The British Dental Association met in Dublin this year.

It would seem from their published proceedings they must have had a very successful session. One feature of their display is specially worthy of imitation by American societies. They had a room set apart for a dental museum. This was divided into four parts—for manufactures, for literature, for surgery, and for a workroom. There was displayed 800 specimens of phenomenal development of teeth; a large display of plaster models, showing cleft palates and irregularities of teeth; a surgical apparatus for regulating and other operations. The exhibition of specimens of ancient dentistry was quite full, including dentures carved in ivory, natural teeth set in ivory plates, etc., with many instruments and specimens dating back to the 16th century. Specimens of oral anatomy and comparative and oral pathology were numerous. A gorilla's jaw with a cuspid tooth attracted attention as the only specimen said to be in existence. The photograph of a bird discovered in America, having teeth, was seen. Also there was displayed photographs illustrating various forms of diseases of teeth, both of men and lower animals.

The September "Items" necessarily went to press without our revision. We are sorry to see a few errors, especially the absence of credit to the *Independent Practitioner* for an article.

Dr. J. W. Peek, Recording and Corresponding Secretary of the Florida Dental Association, may be addressed at Memphis, Tenn.

Miscellaneous.

CURIOSITIES OF COAL.

Does any one except a practical chemist ever stop to think of all the substances we get from pit coal and the almost inconceivable variety of their uses? Everybody is familiar with those of them that are in daily use, such as gas, illuminating oils, coke and paraffine; but of the greater part few persons know even the names, science advances so rapidly and its nomenclature is so extensive and so abstruse. It is no wonder that merchants and manufacturers take advantage of this ignorance to foist upon the public articles of food, of drink, or for the toilet that, if they are not always dangerous to the health, have not in them a particle of the substance they pretend to contain. Though pit coal has been known for some hundreds of years, the discovery of its numberless products is confined to the present century. Illuminating gas was unknown a hundred years ago. Petroleum has been in use only about forty years, and it is scarcely more that fifty since some one discovered that stone coal was inflammable. Nearly all the other products derived from soft coal have been discovered and applied to the interests of science or of fraud within the last twenty-five years. The first thought in regard to coal is that it was made to give heat or warmth; the next that one of its principal uses is to illuminate. But there are obtained from it the means of producing over four hundred colors, or shades of color, among the chief of which are saffron, violet, blue and indigo. There are also obtained a great variety of perfumes—cinnamon, bitter almonds, queen of the meadows, clove, wintergreen, anise, camphor, thymol (a new French odor), vaniline and heliotropine. Some of these are used for flavoring. Among the explosive agents whose discovery have been caused by the war spirit of the last few years in Europe are two called dinitrobenzine, or bellite, and picrates. To medicine coal has given hypnone, salicylic acid, naphthol, phenol and antipyrine. Benzine and naphthaline are powerful insecticides. There have been found in it ammoniacal salts useful as fertilizers, tannin, saccharine (a substitute for sugar), the flavor of currants, raspberry, and pepper, pyrogalic acid and hydroquinone used in photography, and various substances, familiar or unfamiliar, such as tar, rosin, asphaltum, lubricating oils, varnish and the bitter taste of beer. By means of some of these we can have wine without the juice of the grape, beer without malt, preserves without either fruit or sugar, perfumes without flowers, and coloring matters without the vegetable or animal substances from which they have been hitherto chiefly derived.

What is to be the end of all this? Are our coal beds not only to warm and illuminate, but to feed and quench the thirst of posterity? We know that they are the luxuriant vegetation of primal epochs stored and compressed in a way that has made them highly convenient for transport and daily use. They are nature's savings laid up for a rainy day of her children, the human race, and it is probably because they are composed of the trees, the foliage, the plants, the roots, the fruits and the flowers of the ancient world that they now so largely supply the places of our forests, plains, fields and gardens.—*San Francisco Chronicle.*

THE HOT AIR OR TURKISH BATH FOR SUNSTROKE.

DR. L. P. HASKELL, CHICAGO.

[From Chicago Herald.]

Twenty-five years ago Mr. Urquhart, a wealthy English gentleman, was traveling in the south of Europe and had a sunstroke. It so happened he was in the neighborhood of a Turkish bath, and by the advice of a physician was taken to it, and found speedy relief. He at once investigated the bath, a subject with which he, as most persons outside and in the medical profession, was totally unfamiliar, either with its *modus operandi* or effects.

The result of this was he became an enthusiastic convert to it, returned home, introduced one in his own residence, and visiting Dr. Barter's celebrated water cure, at Mary's, near Cork, induced the Doctor to introduce it into his establishment, and now it is to be found all over Great Britain, where it is resorted to by hundreds of thousands of all classes, in health and for disease. Not only this, but many of the ablest members of the medical profession in Great Britain recognize its great merits as a curative agent.

There is already an extensive literature on the subject in Great Britain, none of which is more forcible than a paper read before the Social Science Association of Glasgow, by Dr. Erasmus Wilson, the well-known writer on skin diseases.

Now, why is the Turkish bath (not a steam nor a vapor bath, but dry, hot air) the most potent of all remedial agents known to science? Simply for the reason that it places the whole system in a condition to throw off disease, as no other agency does.

And why? Simply this, that nature in her effort to protect the body from this high temperature, throws out moisture, the evaporation of which protects the body. And in doing this what results? The pores, which for a long time, perhaps, had been inactive, are opened, and the impurities are now eliminated through nature's sewers, and extra duty, which had been thrown on other organs, and largely the kidneys, is now relieved.

To accomplish this the blood is brought to the surface, and thus the circulation is equalized, and in doing this all congestive tendency, whether of brain, heart, liver or other organs, is at once relieved.

When you have done these three things—restored activity to the skin, equalized the circulation, relieved congestion—you have done all that is possible, and have put nature in the best possible condition to relieve herself, and to an extent that no other remedial agent can.

[At Ocean Grove, N. J., Dr. D. M. Barr conducts a Hygienic Institute, embracing the most complete facilities for Turkish, Russian and mixt baths, etc., we have seen.—Ed. ITEMS.]

The great reforms of the past and the present were first instigated by those denounced as "radicals." The heroes and martyrs of all ages—those who battled for truth, justice and the cause of humanity—have all had their share of abuse for their ultra views or dogmatic assertions.—DR. C. E. FRANCIS.